

# Manufacturers Record

Exponent of America



\$6.50 per Year.  
Single Copy, 20 Cents.

Baltimore, Md.  
JANUARY 5, 1928

## Making SMOOTH the WAY for Progress.



WITHOUT improved highways, it would have been impossible for this country to make a record of progress never before equalled in the world's history. Good roads and motor vehicles have attained, in one generation, a commanding position in transportation and have become a tremendous factor in creating wealth.

Motor vehicles and good roads revolutionized business methods, improved health conditions, shortened distance in time terms and opened up country districts, making smooth the way for progress. Also, good roads offer fire protection to rural sections, advance the cause of rural education, make library service available to remote sections, extend the trade territory of cities and towns, and form an important connecting link in national defense plans.

This country has 3,006,000 miles of highways, of which 575,000 miles are surfaced. It has 23,125,000 motor vehicles, 80 per cent of all in the world.

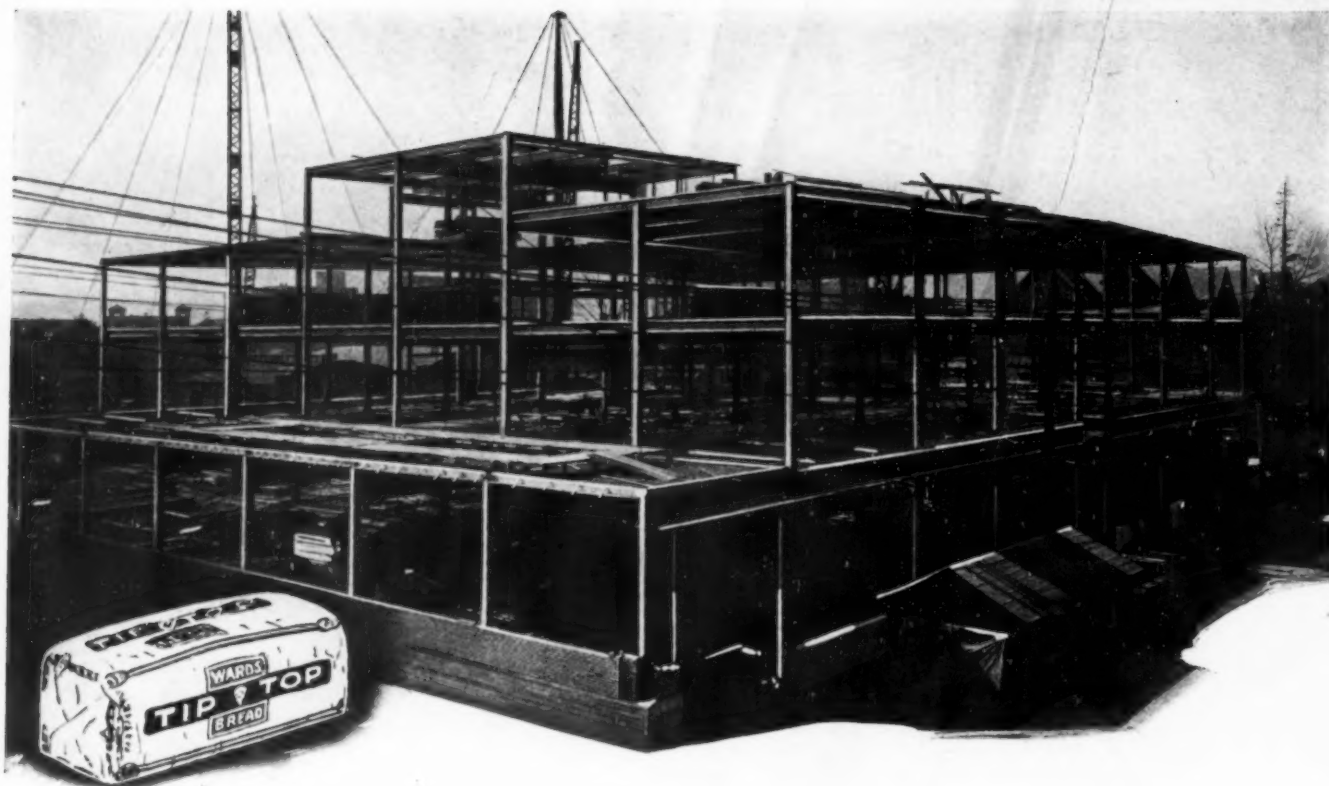
The South, alone, has over one-third of the country's surfaced roads and nearly one-third of the motor vehicles, or about twice as many as the whole country had in 1916.

For the past several years, the United States has been investing annually over \$1,250,000,000 in highways, about one-third being in the South.

We must continue to invest heavily in good roads to maintain our motor vehicle transportation efficiency. With additional millions of motor vehicles in use in the next few years, our annual expenditures must be increased or the country's development will be hampered by transportation congestion, even now keenly felt in many sections which only a short while ago supposedly had facilities adequate for some time to come.

Study the facts presented in the special section of this issue, which is devoted to a review and forecast of the country's highway and motor transportation development, for they bring to you a keener realization of the magnitude of the good roads movement and the part it is playing in the building of the nation.

ANNUAL HIGHWAY REVIEW NUMBER



## Baking with steel



**S**TEEL is just as much a part of fine bakery products as the ingredients themselves—at least, it is in this case where this new Ward Bakery is built of Lehigh Steel. For permanence of construction, steel has yet to be excelled.

Equity Construction Co., General Contractors.  
Rapp Engineering Co., Engineers.

Consult a Lehigh Engineer in planning your next construction job.

# LEHIGH STRUCTURAL STEEL COMPANY

2525 Pennsylvania Ave. N. W., Washington, D. C.  
NEW YORK

PHILADELPHIA  
Works: Allentown, Pa.

Realty Board Bldg., Miami, Fla.  
BOSTON

Ⓔ2254

Entered as second-class matter at the Postoffice, Baltimore, Md., under the act of March 3, 1879.



# Table of Contents

Baltimore, Md., January 5, 1928

Making Smooth the Way for Progress.....Cover Page

## EDITORIALS

Business Leaders Foresee Sound Prosperity in 1928.....	67
"Uncle Joe" Butler Has "Crossed the River".....	68
The Moral Responsibility of American Bankers in Pouring Billions Into Europe.....	69
Strike Agitation in the South.....	69
The Steel Corporation's Wise Decision.....	70

## NEWS ARTICLES

A School in the Tennessee Mountains.....	By H. D. Phillips	71
Cotton Fabrics for Road Construction.....		72
Hiddenite—a Rare Mineral.....	By Joseph Hyde Pratt	73
New Orleans Seeks Road Builders' Meeting.....		74
\$10,000,000 Expended for Louisiana Roads in 1927.....		74
\$3,000,000 Cement Mill for North Carolina.....		107
Developing the Mineral Interests of the South.....		107
Definite Progress in Louisiana.....	By Ben Johnson	108
International Advertising Convention at Detroit.....		108
Railroads Make Record in Operating Efficiency in 1927.....		110
Southeastern States Show Great Industrial Growth.....		132

## Improved Highways Speed the Nation's Development.....75-106

Maintenance—The True Test of a Highway Program.....	By Frank Page	76
Planning Tomorrow's Highway.....	By John N. Mackall	77
Co-ordinating Traffic Control With Proper City Planning.....	By Herbert S. Swan	79
Fundamentals of Traffic Regulation and Control.....	By Harold M. Gould	81
Virginia Prefers "Pay-As-You-Go" Plan of Financing Road Building.....	By Hon. E. Lee Trinkle	82
Highway Bonds a Good Investment in Speeding North Carolina's Development.....	By Hon. Angus W. McLean	83
\$241,597,000 in Southern Road Contracts Awarded Last Year.....		84
The Motor Bus in 1927.....	By A. J. Brosseau	85
Trends in Motor Trucks.....	By Edward F. Loomis	88
\$4,000,000,000 Value of Output of Motor Vehicles and Allied Products Last Year.....		91
American Motor Vehicle Manufacturers See Big Future Demand in Foreign Fields.....	By Pyke Johnson	92
Asphalt Pavements.....	By J. E. Pennybacker	94
Brick Pavements.....	By M. B. Greenough	96
Record Sales of \$182,000,000 Southern Road Bonds Last Year—50 Per Cent Gain Over 1926.....		97
Concrete Pavements.....	By W. F. Long	98
Resumé of Southern Road and Bridge Construction by States.....		101-106

## DEPARTMENTS

Iron, Steel and Metal Market.....	109
Railroads.....	110
Good Roads and Streets.....	111
New and Improved Equipment.....	112
Construction.....	114
Financial News.....	134

## Manufacturers Record

RICHARD H. EDMONDS, Editor

PUBLISHED EVERY THURSDAY BY THE

### MANUFACTURERS RECORD PUBLISHING CO.

Office: Manufacturers Record Building, corner Commerce and Water Streets, Baltimore, Maryland  
Printing Plant, 8th Floor, Candler Building, Market Place and Lombard Street, Baltimore, Maryland

RICHARD H. EDMONDS, President; FRANK GOULD, First Vice-President; VICTOR H. POWER, Second Vice-President;  
I. S. FIELD, Secretary; J. ROBERT GOULD, Treasurer

#### BRANCH OFFICES:

CHICAGO, 11 South La Salle Street

NEW YORK, 901 Singer Building

CINCINNATI, 333 Dixie Terminal Building

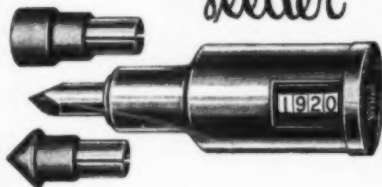
#### SUBSCRIPTION RATES:

\$6.50 a year (in advance); six months, \$3.50; three months, \$2 to United States, Mexico, Cuba, Porto Rico, Hawaii and the Philippines. For Canada add postage \$2 a year. For other foreign countries add postage \$5.50 a year. Back numbers, if available and not over one month old, 20 cents each. From one month to six months old, 50 cents each; over six months old, \$1 each. In ordering change of address, give old as well as new address.

MEMBER ASSOCIATED BUSINESS PAPERS, INC., AND AUDIT BUREAU OF CIRCULATIONS

# The Veeder Manufacturing Co.

MANUFACTURERS OF

No. 21  
Clutch  
Speed  
Counter

COUNTERS, ODOMETERS, CYCLOMETERS  
TACHOMETERS, FINE DIE CASTINGS

Hartford, Connecticut

# YELLOW STRAND WIRE ROPE

Expertly made  
of imported wire  
drawn from the finest  
steel in the world. Strong,  
elastic, durable. Get Catalog 85.

BRODERICK & BASCOM  
ROPE COMPANY

New York City

ST. LOUIS

Seattle

# TRADE "LEADITE" MARK

Registered U. S. Patent Office

For Jointing Cast-Iron Water Mains  
Saves at Least 75%

Leadite Tested and Used for Over 30 Years

Leadite Joints Improve with Age

The Leadite Co., Land Title Building, Philadelphia, Pa.

See our full page ad second issue each month

# NO CAULKING



**ORTON**  
CRANE & SHOVEL CO.

608 S. Dearborn St.  
Chicago - Illinois

# ASHLAND FIRE BRICK

What a world of difference just the  
right brick makes! Ashland brick  
lasts longer, goes farther, and gives  
less trouble than ordinary fire brick.

ASHLAND FIRE BRICK CO.  
Inc. ASHLAND, KENTUCKY 1886

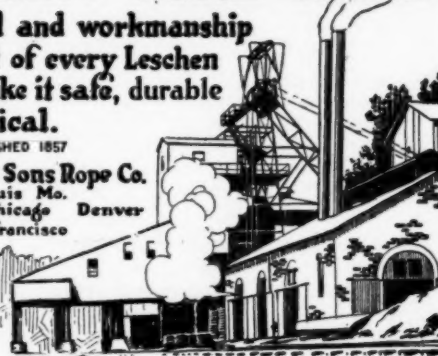
# LESCHEN WIRE ROPE

The material and workmanship  
that is a part of every Leschen  
Wire Rope, make it safe, durable  
and economical.

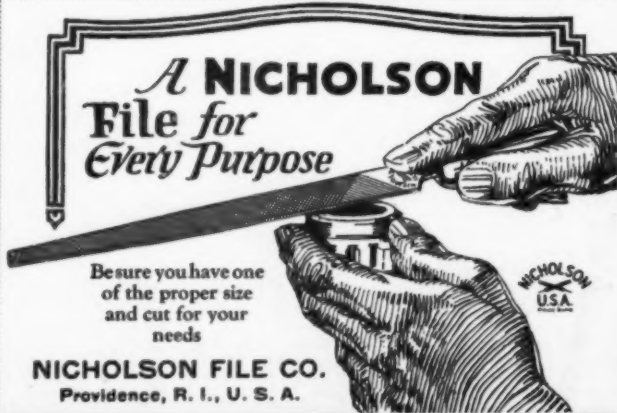
ESTABLISHED 1857

A. Leschen & Sons Rope Co.  
St. Louis Mo.  
New York Chicago Denver  
San Francisco

All Leschen  
Steel Wire Rope  
is made of  
Acid OpenHearth  
Steel Wire



# A NICHOLSON File for Every Purpose

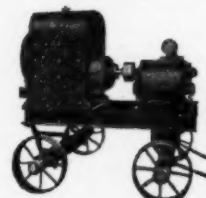


Be sure you have one  
of the proper size  
and cut for your  
needs

NICHOLSON FILE CO.  
Providence, R. I., U. S. A.

# The Heart of Construction Equipment

Where a constant supply of  
water is necessary you can  
depend on PowermakeR  
Force Pumping Units to give  
you from 30 to 75 gallons  
a minute as long as you  
want it.



Ask Us for Bulletin PFP-1

THE COOK MOTOR CO., Delaware, Ohio

**PowermakeR**  
EQUIPMENT



# Manufacturers Record

EXPONENT OF AMERICA

Devoted to the Upbuilding of the Nation Through the Development  
of the South and Southwest as the Nation's Greatest Material Asset

Trade-Name Registered in the U. S. Patent Office

Vol. XCIII No. 1 {  
Weekly.

BALTIMORE, JANUARY 5, 1928.

{ Single Copies, 20 Cents.  
\$6.50 a Year.

## Business Leaders Foresee Sound Prosperity in 1928.

**S**OUND and reasonable optimism in the American business outlook for 1928 is the predominant and sustained note in a symposium conducted by the National Association of Manufacturers, made public a few days ago. Taken in conjunction with a similar sentiment expressed at the recent convention of the American Bankers' Association, this feeling of reasonable optimism may be regarded as almost unanimous in business, industrial and financial circles throughout the United States.

Not that some "slight recession from this fine condition" is not to be expected, John E. Edgerton, president of the National Association of Manufacturers, explains, but that "the great majority of the indications for 1928 are favorable," as A. H. Mulliken, president of the Pettibone-Mulliken Company, Chicago and New York, expresses it. Some manufacturers temper their optimism with caution and some bankers suggest protective measures against possible stress; yet, even in such minds optimism is uppermost, and suggestion of preparedness is an indication of sound business procedure.

In thoughtful analysis of the business situation as affecting all the people of the land, Mr. Edgerton finds that the manufacturer and the farmer have not profited as have the "employed masses" and the consumers. As he put it in a statement:

"Under well-known economic pressures, the margin of profit to the producers of wealth, particularly manufacturers and farmers, has become so uncomfortably and dangerously narrow that it seems inevitable there must soon be a general rise in commodity price levels or a reduction in the cost of production, involving possibly a lowering of living standards. \* \* \* But the employed masses and the consumers have not suffered. On the contrary, they have prospered. On the basis of the real wages, the condition of the workingman today is nearly 30 per cent better than it was before the war. The \$40,000,000,000 in our savings banks and the luxuries which the working people are enjoying are the convincing evidences of their prosperity. At the expense of the manufacturer and the farmer, every other element of our population has advanced in its economic position."

On the whole, an encouraging statement. The buying element of the land is in a position to continue buying, which automatically will continue stable production; and, stable production will continue to furnish work for the "employed masses." That the American manufacturer, as typified by Mr. Edgerton, for instance, will find ways and means to increase his margin of profit in constructive fashion, rather than by any "lowering of living standards," there can be little, if any, question in the minds of persons who know and admire the business acumen of the American industrial leaders. No one knows better than the American manufacturer that his prosperity depends largely on the prosperity

of the "employed masses" in the land, and he may be counted on to devise constructive methods to increase and strengthen the prosperity of both.

So, too, with the farmer, whom Mr. Edgerton describes as non-participant in the general prosperity. Already, as shown in the MANUFACTURERS RECORD last week, the American farmer in 1927 was \$635,000,000 better off than he was in the preceding year—and, incidentally, the fact may be cited that more than half of this prosperity improvement was enjoyed by the cotton farmers of the South. "Viewed from the standpoint of agriculture, the prospects for 1928 are much better than they were at this time last year," said the MANUFACTURERS RECORD, and in making this confident assertion it knew whereof it spoke.

But, on what foundations do these American industrial leaders base their sound optimism for 1928?

As L. A. Downs, president of the Illinois Central Railroad system, sees it:

"Business as a whole is fundamentally sound. Unfavorable conditions are mostly transitory, and favorable conditions predominate. The improvement in agriculture should stimulate business in general. The South is on a broader and more stable economic foundation than ever before, and its relative importance is growing. The sustained high volume of our foreign commerce is encouraging. The railroads are providing the American public with the most reliable and relatively the cheapest transportation ever known. Amicable relations generally prevail between men and managements. Wages are high. Business undertakings of demonstrable merit can be financed readily. There is virtually no accumulation of stocks. The automotive industry faces the prospect of increased demand for its products. These facts justify confidence in the future."

This emphasis on the South as a substantial contributor to the national prosperity, present and in the future, is not in the nature of flattery for that section, but the business view of a seasoned railroad executive whose duties have involved a deep study of the South and careful weighing of its achievements and possibilities. Not only has the "relative importance" of the South to the rest of the country become of paramount importance, but also it "is growing"—and it will grow and will develop as the years roll on, into an indefinite future. The agricultural soundness of the South is seen in its contribution of more than 50 per cent to the increase of \$635,000,000 in the American farmer's income. The industrial soundness of the South is demonstrated almost daily by the migration of great industries from other sections to its area. The financial soundness of the South is shown, for instance, in its ability to weather the fearful economic effects of the unprecedented Mississippi flood. And back of these is a moral

and mental soundness unexcelled in any section of the world. The South is the keystone in the rainbow arch.

The view of W. Hume Logan, president of the Logan Company, Louisville, Ky., is thus expressed:

"In my opinion, 1928 will be an improvement on 1927, in that there will be a greater demand for the products of farm and factory. Factories, however, are so well tuned up and hungry for business that competition will be strong, especially during the first six months. This will make it difficult to advance prices and, in many cases, hard to maintain the present low level. The aggressive factory, well equipped with machinery for manufacturing and handling at low cost, should have a satisfactory year."

J. H. Puelicher, president of the Marshall & Insley Bank, Milwaukee, Wis., puts it this way:

"America has been experiencing a very real and a very sane prosperity for the past two years and, while 1927 has not exceeded 1926, it has pretty nearly kept pace with it in total, even in the light of the overwhelming disasters which nature brought to several extensive and important areas of our country. It seems to me that we can march into 1928 with much confidence in the probable continued prosperity of this land, provided, of course, that we do not diminish our watchfulness or our cautiousness, continue to eliminate waste and learn efficiently to distribute our products, keep production level with demands, conserve all the factors that make up the whole fabric. Probably the two safest elements on which to rest the prediction of a continuation of our present prosperity are the abundance of money for all legitimate business uses and the lack of big stocks, both in factories and in retail stores."

In other words, the foundation laid in 1926 and 1927 for 1928 is "a very real and a very sane prosperity." The business of 1928 will rest on rock, and not on quicksand.

Just as "competition is the life of trade," so does E. G. Scott, vice-president of the Smith & Scott Tobacco Company, Paducah, Ky., say:

"In my opinion, business and industry will stage a gruelling race of competition in 1928. \* \* \* More value for the ultimate consumer will be the watchword of those who would seek and find prosperity in a fierce, white-hot competition."

And right here the thought may be interjected that such competition will further stimulate the American industrialist in his effort to increase his margin of profit in constructive fashion, rather than by any "lowering of living standards."

So, "looking into next year," Mr. Edgerton says:

"I would say that our legislators should exercise more than usual caution against passage of any laws that would add uncertainties of business to the uncertainties of a Presidential year. Particularly at this time, there is an agitation for a revision of the tariff. That is largely due to the fact that the people in general have been taught to believe that the tariff was instituted and maintained primarily and exclusively for the benefit of the manufacturing industry. Nothing was ever further from the truth. Those who are informed know that our high wages, high standard of living and all the material prosperity that we have are due more to the protection afforded the productive industries of America by the tariff than to any other one thing. Two other pillars supporting our industrial structure are the open shop and the American principle of equal rights."

"To protect our manufacturing industries and the farmers against hasty, unwise legislation, I believe, is the outstanding need for the coming year."

The soundness of Mr. Edgerton's utterance on the American protective tariff rests primarily on the truth of his words. His warning against "hasty and unwise legislation" for the manufacturing and agricultural industries is timely and impressive.

Founded on the soundness of conditions in 1926 and 1927, and under the guidance of sound American industrialists and financiers, the prosperity predicted for 1928 seems assured, and stable in its nature.

And so, in predicting prosperity for the United States, these business men speak for all the world, in large measure. On the prosperity of the United States rests largely the pros-

perity of all civilization. American industry and finance—and American statesmanship, also—face a twelvemonth of prodigious responsibility; but, they face it with courage, with clear thought and with American enterprise—and with confidence of the American people.

## ANOTHER NATIONAL ORGANIZATION SELECTS THE SOUTH FOR ITS ANNUAL MEETING.

THE Concrete and Reinforcing Steel Institute, with headquarters at Chicago, has sent out a notice to the effect that the next annual meeting of the institute will be held on March 19-21 at Biloxi, Miss. This announcement says:

"The directors of the institute, at their quarterly meeting held in Chicago December 13, selected Biloxi, Miss., as the place for holding the fourth annual meeting of the institute. The meeting will be held March 19 to 21, inclusive, at the Edgewater Gulf Hotel, which is located on the Mississippi Gulf Coast two hours from New Orleans. A very attractive golf course is situated practically at the door of the hotel and, in addition, many interesting resort features will be available for representatives of the institute and their families. The motor drive between Biloxi, Gulfport and Pass Christian is one of the most delightful in the country."

It is now becoming almost the fad for great national organizations to hold their annual meetings in the South. This means a closer acquaintanceship between all sections and a better understanding for the good of the whole country.

## "UNCLE JOE" BUTLER HAS "CROSSED THE RIVER."

THE death in his 87th year of Joseph G. Butler, Jr., of Youngstown, Ohio, when his family were gathering to celebrate his birthday, brings to mind an interesting address made by Mr. Butler, one of the great steel men of America, at one of the Gary dinners held in 1907. In the course of his address, he expressed the thought that the iron and steel men of the country, viewed purely from the selfish standpoint, could better afford to close their plants and wait for better times, than to run them at a loss as they were then doing during the panic of 1907. But Mr. Butler stressed the necessity for keeping the plants in operation for the benefit of the workingmen. His whole heart seemed to be centered upon the thought of protecting the workingmen from a long period of idleness; and that was the spirit with which many other iron and steel people spoke at these Gary dinners.

Mr. Butler was familiarly known to the iron and steel trade of the country as "Uncle Joe." He had been engaged in this industry for 70 years or more, starting as a clerk in a rolling mill at Niles, Ohio. It was due to his untiring work that the \$300,000 monument was built to former President McKinley—the President and Mr. Butler having been intimate friends for many years. He will be sadly missed in the meetings of the American Iron and Steel Institute.

## A NECESSITY.

HENRY W. BEILKE, local manager at Columbus, Ga., of the Available Truck Company of Chicago, Ill., in a letter to the MANUFACTURERS RECORD says:

"I am enclosing money order for \$6.50 for renewal of the MANUFACTURERS RECORD. I am in the highway building business and find your paper a necessity, as it is very valuable in helping me to get lined up with future jobs."

"As to comment on your paper, I have no criticism to make, but I have applause. I think your editorial on the cover page of December 1, 1927, is beyond criticism. I believe that's what the American spirit ought to be, and I wish every real American could or would read it. More power to you."



## The Moral Responsibility of American Bankers in Pouring Billions Into Europe.

**R**ARELY have we seen a more thoughtful and suggestive discussion of the investment of foreign capital in Europe than an editorial on the subject in a recent issue of the Saturday Evening Post. After questioning the wisdom of the State Department in passing on for approval or disapproval certain loans to foreign countries, the Post calls attention to the fact that "no people ever before plunged into foreign investments with so little background of experience as we are doing."

"It is a movement," says the Post, "governed by no policy, no program, no definite prospect. The bankers' responsibility is limited even in the particular case, as, for example, in the case of a \$50,000,000 loan floated a few weeks ago in Wall Street for the German Central Agricultural Bank. The advertisement of the bonds ended with this note in small type:

"The above information has been obtained, partly by cable, from official statements and statistics and from other sources which we consider reliable. We do not guarantee it, but believe it to be correct."

"This," said the Post, "is not the first loan which has been floated in Wall Street for German agriculture. But when American agriculture wants capital for purposes of a revolving fund to handle orderly marketing, it must look to the Government for it. The idea that foreign loans help our export trade does not apply here; as German agriculture is built up with American capital, the German market for American food staples will not improve."

"Indirectly," says the Post, "these investments of American capital concern hundreds of thousands of American bank depositors who may know nothing whatever about it, not even that they take place, for large quantities of these bonds are sold to banks all through the country. The banks invest their depositors' money in that way because it is immediately profitable to do so—because the rate of interest is high. Moreover, many individual buyers of foreign bonds do not buy them outright; they pay only a small part out of their resources and borrow the remainder at the bank, pledging the foreign bonds as collateral."

"Such employment of American banking resources, directly or indirectly, in foreign securities has assumed enormous proportions. These loans are being floated at the rate of more than a billion a year, the total for the first three-quarters of this year having been \$954,000,000."

"It is obvious," said the Post, "that at this rate the time must come when American banks will find themselves deeply involved with the moral, political and economic solvency of foreign governments and foreign debtors. Not Wall Street banks primarily, but banks all over the country—big ones in the manufacturing centers, and little ones in the Corn Belt."

"We talk," says the Post, "of the extravagance of American municipalities with schools and roads, and wonder if they can afford their debts. But we lend money to foreign municipalities for uses both extravagant and unproductive and think nothing of it—money for Germany to pay reparations with, debating at the same time in an academic spirit whether she will be able to pay both reparations and the interest on American loans."

A large proportion of these loans have been issued through reputable American bankers, but, as we recently stated, we seriously doubt whether these issuing houses are carrying a

large amount of these investments on their own account. We reminded our readers a few weeks ago that the great house of Baring Brothers—once standing in Europe as a Gibraltar of Finance—was responsible for floating many of the securities issued by the negro legislatures which controlled the issuing of bonds in many Southern States during the days of Reconstruction. Baring Brothers, and we are advised by an English writer that they were responsible for placing these securities, ought to have known better. For the liberal commission which we presume they received, they inveigled their security buyers to take about the most rotten so-called securities ever issued in the world's history. Every reputable banker ought to have known that these bonds were worthless, that they were conceived in fraud and born in fraud, and the bankers who sold them ought to be held accountable, if they were still in existence, for securing money from their clients under false pretenses.

When the time comes, as it almost inevitably will, that many of these foreign investments prove to be as unsafe as were the Reconstruction bonds issued by some Southern States, the bankers who put out these securities will have few or none on hand for their own account, but their correspondent banks throughout the country and private investors will be bearing the load; and the bankers, when inquiries are made of them, will reply that in their advertisement they distinctly stated they did not guarantee the correctness of the statements their advertisements carried.

With an investment in foreign securities of about \$1,000,000,000 a year of American money, much of it put up by bankers throughout this country, and probably without the knowledge of their stockholders, and much of it in the hands of innocent investors, and \$700,000,000 or more of American money paid to foreign steamship lines and spent in foreign countries by tourists, we are enriching Europe to an enormous extent while failing to do the great empire building work which should be done for the development of this country.

American bankers may some day be held morally responsible, if not legally, for having brought our country into entanglements of every kind by rushing into these foreign investments on an unprecedented basis, and making many loans dangerous to the extreme for the investor. And if the loans prove successful, it will be by developing industries in foreign lands designed for the express purpose of capturing the American market and breaking down American industries.

---

### STRIKE AGITATION IN THE SOUTH.

**A**GITATION for reduction in hours of labor in the South is reported in a news dispatch from Charlotte, N. C., to have been instituted recently at "a secret meeting at Greensboro," with Paul Blanchard of New York as sponsor and Prof. Broadus Mitchell of Johns Hopkins University as chairman. "Plans were laid for forming a permanent organization to carry on the drive," says the news wire.

The activities of a group led by Blanchard bode ill for the industrial peace of any industry in which he is a leader, judged by the past. In a report of a joint committee of the New York Legislature on "Revolutionary Radicalism—Subversive Movements," under a chapter captioned, "Revolutionary Industrial Unionism," is a sketch of a strike instigated at Utica, N. Y., by the Amalgamated Clothing Workers

of America "to gain control of industry," as the report puts it. The Utica strike, it explains, was technically "the strike of the textile workers." Says the report:

"A description of the methods employed by the strike organizers to effect their purpose was given to this committee by Capt. John R. Wright of the Utica police. Captain Wright testified that the organizers of the Amalgamated Clothing Workers of America and the newly created Amalgamated Textile Workers had been working in Utica some time prior to the strike, holding secret meetings, and that the principal agent sent there for that purpose was one Paul Blanchard."

"The strike was carried on by the combined Amalgamated Clothing and Textile Workers, who publish a paper entitled, 'The Clarion,' in which Paul D. Blanchard is named as editor, with offices at 670 Bleecker street, Utica, N. Y."

Two points: The strike was preceded by "secret meetings," such as that at Greensboro, and was apparently fomented by Paul Blanchard, sponsor of the recent Greensboro meeting.

The entire South—above all, the working men and women—must be on guard. Blanchard is abroad in the land and secret meetings are in vogue. The strike at Utica, as Captain Wright indicates, was the outcome of just such a combination.

### DAIRYING EMANCIPATING NEGROES AND TENANT FARMERS FROM ECONOMIC SLAVERY.

**L.** J. FOLSE, general manager of the Mississippi State Board of Development, Jackson, writing the MANUFACTURERS RECORD gives the following interesting bit of information:

"We have just run across an item of interest in the dairying development at Starkville, Miss. The Borden Milk Company's condensery at Starkville has about 1200 patrons who supply milk and cream: 501 of these are negro farmers who are drawing approximately \$15,000 a month, or about \$360 a year for each negro farmer. And all the farmers who deliver milk to the condensery are making as much cotton as they ever did.

"The dairying development in Mississippi to the negro race alone means more to their welfare and future progress than the Emancipation Proclamation. The complete economic liberation of the negro and the so-called poor white farmer of the South is coming rapidly through the dairy cow and hydro-power. Mississippians are taking advantage of their opportunities in fine fashion, and if we keep up our present stride Wisconsin and Minnesota will have us to contend with in the next decade. However, there is room for all of us."

### CONGRESSMAN STRONG BELIEVES IN OPEN MEETINGS OF FEDERAL RESERVE BOARD.

**H.** ON. JAMES G. STRONG, a member of the Committee on Banking and Currency in the House of Representatives, in a letter to this paper commending the position which it has often taken in favor of open meetings of the Federal Reserve Board, writes as follows:

"I fully agree with you as to the importance of publicity, both of decisions and of the reasons for such decisions. The power of the Supreme Court is negligible compared with the power of our Federal Reserve authorities, who could, if they wished, influence national policies and guide the destinies of the Nation. Every effort should be made to cut out the star chamber proceedings, the confidential bulletins, the air of mystery surrounding all of these questions. The Federal Reserve system is a public agency and the public has a right to know what is going on.

"I hope you will urge this view whenever you have an opportunity."

### THE STEEL CORPORATION'S WISE DECISION.

**I**N making James A. Farrell its executive officer and in selecting J. P. Morgan as chairman of the board, the Steel Corporation directors have assured the continued conservative management of that great organization. Mr. Farrell has long been president, but the late Judge Gary, through his chairmanship of the board, was generally considered the chief executive officer. Mr. Farrell will henceforth fill that position. Through the years of his presidency he has demonstrated his pre-eminent ability in the management of that great property.

Among steel men the world over Mr. Farrell is recognized as one of the most thoroughly informed, if not the most thoroughly informed, steel executive living today. His intimate acquaintanceship with every phase of the vast and intricate details connected with the manufacture of iron and steel would be a source of constant amazement to his friends and co-workers, except for their knowledge of his intense application throughout his whole life to the task to which he has applied himself. In his testimony in the dissolution suit instituted by the Government some years ago, Mr. Farrell was for days on the witness stand. In no instance did he fail to have a ready and complete answer to questions of the most intricate sort that were propounded to him by shrewd lawyers in regard to the details of his business. It was said at that time that no man except James A. Farrell could have stood the test so well. Mr. Farrell also has done remarkable work as president of the National Foreign Trade Council, and in this, as in other things, he has thrown his intense vigor and executive capacity into shaping a working organization which is proving of great good to hundreds of exporters and manufacturers interested in foreign trade. The Steel Corporation is to be congratulated upon having available a man of such capability.

As chairman of the finance committee, the Steel Corporation also selected Myron C. Taylor of New York, director of the First National Bank and many other organizations. It has been common knowledge that every expenditure of any consequence in regard to the vast operations of the Steel Corporation, and many times of expenditures for comparatively small items, come before the finance committee for approval. Its functions have always been definite and by no means perfunctory and its personnel selected from the best minds available.

As chairman of the board, J. P. Morgan, who has long been intimately identified with the Steel Corporation, will be in a position to conserve its financial management with that skill which he has maintained since the death of his father in upholding the reputation of that great banking house. Mr. Morgan announces that his duties will be more or less nominal and that the whole responsibility of management will be upon others. Nevertheless, his chairmanship of the board will give utmost confidence to the thousands of stockholders of the corporation and to the country at large. This, we think, is a very happy working out of the entire situation left open by the death of Judge Gary.

### MARVELLOUS OPPORTUNITIES.

**D.** R. HENRY M. PAYNE, consulting engineer of the American Mining Congress, Washington, D. C., in the course of a letter to the MANUFACTURERS RECORD referring to some of his work as consulting engineer of the Gulf, Mobile and Northern Railroad, writes:

"The more work I do in Mississippi and the South in general, the more addresses I make to their leaders, the more obsessed I become with the marvelous opportunities of the next generation in that part of the country."



## A School in the Tennessee Mountains.

PLEASANT HILL ACADEMY IN CUMBERLAND COUNTY—AN INSTITUTION THAT MEANS MUCH TO MANY BOYS AND GIRLS OF LIMITED OPPORTUNITIES.

By H. D. PHILLIPS.

When Amos Wightman and his family came to what is now Pleasant Hill, in 1868, they traveled 35 miles over the rough mountain trails from Rockwood, then the nearest railroad station. There were then three log cabins at Pleasant Hill.

In 1883 Mr. Wightman began to seek help for the education of the children of the community, and early in 1884 the American Missionary Association sent a Miss Santley, who taught the first term of school. The American Missionary Association has stood back of this work through the 40-odd years since that time.

Rev. Benjamin Dodge, with his wife and daughter, Miss Emma, was sent as a missionary pastor late in 1884, and "Father Dodge," as he is lovingly known, had the vision and faith that took form in Pleasant Hill Academy, which has meant so much to many poor mountain boys and girls. The first school building was erected by donations of land, timber and time, while "Father Dodge" raised the necessary money in small amounts of \$5 here, \$7.50 there and \$25 from some place else. The lumber for finish work was hauled 17 miles over the mountains, three miles of which was up the sides of the Cumberlands, some 1500 feet from the valley floor to mountain top. The original building, first used in 1887, is



HOPKINS HALL.

still in use, although it has undergone a number of changes in recent years.

The second building, a boys' dormitory, was built in 1888-89 and is still in use, while the girls' dormitory and dining hall building was built in 1889 and is still in use as such. The second boys' dormitory was built and finished early in 1896, but was burned in 1921, this being the only real fire the school has had. That is strange when one thinks that all these buildings were of wood construction, except the one that burned, which was of brick, and that wood stoves and oil lamps were used in every room until a few years ago—in fact, these were not taken out until after this disastrous fire of 1921. A new boys' dormitory has just taken the place of this one that was burned. The Memphis to Bristol Highway crosses the campus now and the nearest railroad station is seven miles, while it is only a matter of hours now by motor that used to be days by wagon.

The school has an enrollment this year of over 250, which

is considered a very good record, and as a rule there are more applicants than can be accepted because of limited equipment. The students, both past and present, are made up mainly of boys and girls unable financially to go elsewhere. Those who have gone through this school, in a large majority of cases, have finished at higher institutions and have gone out into the world into an ever widening field of endeavor—farmers, physicians, teachers, lawyers, ministers, surgeons, domestic science teachers, librarians, missionaries, both home and foreign, and business men and women in many lines.

The writer personally knows that the majority of these students in this school were, like he was, poorer than the



ROBERTS HALL, THE NEW DORMITORY FOR BOYS.

well-known "Job's turkey." With no one to look to for aid, he entered this school in his twenty-first year and in the eighth grade. He worked every cent of his way, because there wasn't anything else to do. He wanted the education and that was the only way he could get it. There wasn't at that time any place or way of earning money in that section of country—at least, not for men who wanted to go to school. It wasn't lonesome and no one was looked down upon for being in this condition. The best friends the writer has, or ever had, were some of those same schoolmates who worked their



WHEELER HALL—GIRL'S DORMITORY AND DINING HALL.

way through school. Ten dollars to us then would have looked bigger than \$100 now.

No short article can do justice to an institution that has meant as much to the mountain country and the counties of Cumberland, White, Putman, Overton, Morgan, Rhea and others of the Cumberland Mountain plateau country. We hope that it will awaken interest in someone and that

inquiries will be made through the writer as secretary of the Alumni, P. O. Box 1633, Dallas, Texas, who will be glad to answer any questions. There is urgent need just now for funds to build an administration and library building and possibly one or two other smaller buildings.

### Cotton Fabrics for Road Construction.

A new use for coarse cotton fabrics in road construction was reported to the New Uses section of the Cotton Textile Institute, Inc., of New York, the fabric providing a membrane which is embedded in surfacing materials. In the past year tests have been made near Newberry, S. C., by Charles H. Moorefield, State highway engineer, which are said to show that such fabrics may be of great importance to highway engineers for improving country roads at a minimum cost. The road on which the tests were made was of top-soil construction, consisting principally of small size gravel mixed with sand and clay as a binding material, on which a bituminous surface treatment was applied.

The first step in the process was to scarify the surface of the road, it is said, and as it gradually rebounded under traffic, the surface was kept smooth by the use of scrapers or drags. A prime coat of light tar was then applied and allowed to "set" partially. On the following day an open weave cotton fabric having a yarn count of 7 by 7 in both warp and filling and weighing about 7 ounces per yard was spread over the tar. Hot asphalt of 150 to 200 penetration was then applied to the fabric and the asphalt covered with coarse sand to give a wearing surface. Immediately after the surface treatment the road was ready for traffic.

E. C. Morse, in charge of the New Uses section of the Institute, states that the highway shows very little wear after a period of nearly one year, the cotton membrane serving its purpose admirably. Engineers report that materials had been kept in place and little tendency was noted for holes to form. The cost of this type of road is said to be so low as to make it practicable in thinly settled sections.

### \$1,203,000 to Be Expended by Utilities Company.

Beaumont, Texas, December 28—[Special.]—An expenditure of \$1,203,000 for enlargements and improvements in the Beaumont district will be made by the Gulf States Utilities Company, this city, during 1928, according to J. G. Holtzclaw, vice-president and general manager. The largest single item involves a cost of \$353,000 for additional facilities in Beaumont, Port Arthur, Orange, Jasper, Silsbee and Hull. A \$250,000 sub-station will be built in Beaumont to replace the present one, while an addition is now being built to the Neches station, increasing the capacity of this plant for 1928 to 211,200,000 kilowatts, an increase of 55,000,000 kilowatts over the 1926 production. Other construction will include a third high-line between Beaumont and Port Arthur to cost \$250,000; sub-stations and improvements and installation of voltage regulators at Port Arthur, \$100,000; improve street lighting in that city, \$35,000, and improvements to boiler equipment at Orange, \$40,000.

### To Build 128 Residences at Temple, Texas.

Temple, Texas.—Stanton & Campbell have begun the erection of residences at Park Lawn and Rose Lawn in this city and expect to erect 128 in two to four years, the cost to range from \$4000 to \$25,000. The dwellings will be of brick, brick veneer, stucco and frame, of various dimensions, with concrete foundations, hardwood and edge grain pine floors, tile, composition and shingle roofs. Construction by the owners.

### Power Transmission Association Grows.

Practical and energetic work for the development of the industries represented in its membership was urged by President W. H. Fisher at the recent annual meeting of the Power Transmission Association, with headquarters in the Drexel Building, Philadelphia, Pa. When organized, a year ago, said Mr. Fisher, the Association had 84 members, while the roster at present shows 105, or a net gain of 25 per cent.

In a report on a survey of the power transmission field, a feature was a disclosure of "increasing tendency in industries toward concentration in fewer and larger plants, especially in such as those whose yearly sales are \$1,000,000 and over." A marked increase in efficiency was found, showing that 25 per cent less wage-earners and 17 per cent less salaried officers served in 1923 to produce equal units to 1914, the average horsepower per establishment in 1914 was 125.8 and in 1923 was 168.5, while the horsepower per wage-earner in 1923 was 3.7, as compared with 3.2 in 1914.

"A year ago," said Mr. Fisher, "the transmission industry was just awakening to the fact that it was high time to inaugurate a co-operative movement to protect and promote the interests of the various industries involved. Today we have the nucleus of a large and powerful organization, functioning satisfactorily and rendering efficient service to all its members."

Among the committees of the Power Transmission Association are:

**Publishers Relations**—Clay C. Cooper, Mill Supplies, Chicago; A. P. Gumaer, The McGraw-Shaw Company, New York city; W. E. Irish, McGraw-Hill Publishing Company, New York city; F. M. Feiker, managing director, Associated Business Papers, New York city; D. R. Egbert, Power Transmission and International Trade Press, Chicago; Harvey Conover, Mill and Factory, New York city; W. A. French, Dodge Idea, Mishawaka, Ind.; Mr. Lash, Mechanical Engineering and other A. S. M. E. publications, New York city.

**Dealers Relations**—Alvin M. Smith, Smith-Courtney Company, Richmond, Va.; Charles H. Allinger, Charles Strelinger Company, Detroit; Frank P. Welles, National Mill and Supply and Machinery District Association, Charles H. Besly Company, Chicago; Alfred S. Weaver, Briggs Weaver & Co., Dallas, Texas; George Root, Root, Neal & Co., Buffalo, N. Y.; William Essmuller, Essmuller Mill Furnishing Company, St. Louis, Mo.; E. B. Hunn, C. S. Mersick & Co., New Haven, Conn.; T. E. Hazell, William H. Taylor & Co., Allentown, Pa.; R. W. Baker, Smith-Booth-Usher Company, Los Angeles.

**Merchandising Advisory**—W. W. French, Dodge Manufacturing Corporation, Mishawaka, Ind.; Wylie K. Lee, Clipper Belt Lacing Company, Grand Rapids, Mich.; T. R. Hopkins, Chicago Belting Company, Chicago; H. M. Carroll, Hyatt Roller Bearing Company, Newark, N. J.; William Warr, Manhattan Rubber Company, Passaic, N. J.; R. C. Ball, Philadelphia Gear Works, Philadelphia; E. T. Gregler, Medart Company, St. Louis, Mo.; F. C. Barth, Graton & Knight, Worcester, Mass.; F. A. Emmons, Foote Brothers Gear and Machine Company, Chicago; M. F. Dunne, Pyott Foundry Company, Chicago; Roy C. Moore, Charles A. Schieren Company, New York city.

**Board of Advisory Engineers**—William Stanlar, the du Pont Companies, Wilmington Del.; Lee F. Adams, General Electric Company; O. S. Hagerman, for W. C. Beckford, American Light and Traction Company, 120 Broadway, New York city; F. T. Brooks, Philadelphia Suburban Counties G. & E. Co., Norristown, Pa.; H. D. Fisher, New Haven Pulp and Board Company, New Haven, Conn.; K. D. Hamilton, George E. Keith Company, Brockton, Mass.; D. A. Hampson, Morgans and Wilcox Manufacturing Company, Middletown, N. Y.; E. W. Zimmerman, Brown Lipe Chapin Company, Syracuse, N. Y.; Winthrop B. Wood, Joseph Bancroft & Sons Co., Wilmington, Del.; O. V. Murphy, West Point Manufacturing Company, Shawmut, Ala.; W. F. Schaphorst, 45 Academy street, Newark, N. J.

Among the firms represented were Browning Roberts Belting Company, 408 W. Jackson avenue, Knoxville, Tenn., by F. W. Browning, and Medart Company, St. Louis, by J. E. Henry, secretary.



## Hiddenite—a Rare Mineral.

NOW BEING MINED IN ALEXANDER COUNTY, NORTH CAROLINA.

By JOSEPH HYDE PRATT, Consulting Engineer and Advisor, Chapel Hill, N. C.

One of the more noted gem localities in the United States is near Hiddenite, Alexander county, North Carolina, the region being famous for its variety of gem and mineral specimens. The most outstanding gem which has been found and the one which has made this locality celebrated is Hiddenite, an emerald green variety of the mineral spodumene. This is believed to be the only locality in the world where this gem has thus far been found.

Other gem minerals which have been found in this locality are the emerald and aquamarine varieties of beryl, rutilated quartz (sagenite), smoky and citrine quartz and rutile. Other minerals associated with the hiddenite and emerald are tourmaline, dolomite, garnet, monazite, calcite, muscovite, pyrite, chalcopyrite and several varieties of feldspar.

The gems occur in more or less parallel veins in a biotite gneiss, but are not continuous for many feet. Most of the veins have a straight north of east, and dip steeply toward the north. Sometimes the veins run out to seams and in other places they open into pockets lined with crystals of the several minerals mentioned. Some of these pockets are a foot or more in diameter. Most of the crystals are very brilliant and these glittering crystals lining the pockets make a wonderful sight.

The first hiddenite crystal was found in 1879, but it was not until two years later that this mineral was discovered to be a new gem mineral and was named Hiddenite after William E. Hidden, a noted mineralogist, who was the first to recognize it as a new variety. In 1881 he organized the Emerald and Hiddenite Mining Company, which worked the general area for several years. During its work it took out one emerald crystal which weighed nearly nine ounces and was eight and one-half inches long. This crystal is now in the American Museum of Natural History.

On account of litigation, practically no mining was done at the Hiddenite mine from 1888 until 1907, when it was reopened and operations were conducted by the American Gem Mining Syndicate. This company operated for only a

year or two, when the mine was again closed and remained shut down until 1926, when it was leased by the Hiddenite Mining Company, a North Carolina corporation with headquarters at Asheville. This company began mining in the summer of 1926 and has continued operations since that time.

The mining operations are all open-cut work, including both the breaking down of the saprolitic rock and also of the

hard unaltered gneiss. Mining operations in the saprolite are easy and the gem minerals are readily obtained, but in the fresh biotite gneiss, operations are difficult and extreme care has to be taken in breaking down the rock in blasting not to shatter the gems. At the present time a great deal of the rock is broken up by wedges. During the operations of the Hiddenite Mining Company, hiddenite crystals equal to any that have ever been obtained have been found.

In the illustration are shown some of the better hiddenite crystals that have been found, which also gives their size and weight in carats.



SHOWING SIZE OF SOME OF THE FINER HIDDENITE CRYSTALS.

believed that these crystals will cut at least one-tenth to one-twelfth their weight in gems.

In addition to the loose hiddenite crystals, the company also has obtained some wonderful museum specimens of hiddenite in the matrix and it is hoped these can be preserved as found. There is nothing like them at the present time in any of the museums of the country. Beautiful emerald and beryl crystals and also muscovite, rutile, calcite and dolomite have been found, which make magnificent cabinet and museum specimens, and some that will cut gems.

### Texas Christmas Turkeys, \$5,600,000.

Austin, Texas, December 29—[Special.]—Christmas turkey shipments from Texas to outside markets were approximately 700 carloads, each containing 20,000 pounds of dressed meat. The average sale price per car was \$8000, bringing a total of \$5,600,000 to persons engaged in the industry, in addition to the large domestic consumption during the holiday season.

## New Orleans Seeks Road Builders' Meeting.

Determined efforts to obtain the convention of the American Road Builders Association and the Road Show for New Orleans in 1929 will be made at the meeting of that organization in Cleveland, opening next Monday and continuing through five days. For some time past city officials and other prominent citizens have been hard at work on that line, and the ground has been well prepared for reinforcement of the invitation by convincing arguments at Cleveland.

The advantages of New Orleans as a convention city and particularly for the Road Builders Association are graphically presented, in compact form, in a miniature "news-paper" prepared by the New Orleans Convention and Publicity Bureau. "Inasmuch as we secured most of our data from the MANUFACTURERS RECORD, we thought you would probably be interested in seeing a proof of this paper," wrote Sam Fowlkes, executive director of the bureau, in sending a copy.

"Would you favor holding a Road Show in the South if you could be assured of a suitable exhibit hall, ample housing accommodations for those attending, easy accessibility not only to all parts of the South, but also to every section of the country, with balmy spring sunshine thrown in as an extra added attraction?" asked Mayor Arthur J. O'Keefe not long ago, and he will repeat this question, in regard to the convention, to the Road Builders at the Cleveland meeting.

As pointed out by the convention bureau, New Orleans has "ample accommodations to house properly the vast number of visitors" to the Road Builders' convention. Each year, at Mardi Gras time, the city entertains 60,000 to 70,000 visitors and many prominent national conventions, such as the American Legion, the Shrine and the Knights Templar have been taken care of with ease. At the present time two of New Orleans' largest hotels are doubling their capacity, with another large, new hotel almost completed. Nearly 100 hotels provide accommodations for from 50 to 1500 guests apiece.

"New Orleans feels most elated from the fact that its prospects for securing the 1929 convention of the American Road Builders Association and the Road Show are so good," writes Mr. Fowlkes.

## A Young Georgian Wins a Rhodes Scholarship.

Thomas J. Hamilton, Jr., 18-year-old senior at the University of Georgia, is the youngest Rhodes scholar ever sent from Georgia and is believed to be the youngest ever sent from the United States under the Cecil Rhodes will. He will be 19 on September 20, 1928, and enters Oxford on October 1. No student may enter Oxford under 19.

Mr. Hamilton is book review editor of the Augusta Chronicle and is the University of Georgia correspondent for the Chronicle, the Atlanta Journal and the Birmingham News. His father is editor of the Augusta Chronicle.

The young Rhodes scholar from Georgia won out over 10 competitors, all older than he is. He was first honor man over a period of five years at Richmond Academy, Augusta, Ga., and was valedictorian of his class.

## Kentucky Coal Production Rises.

Frankfort, Ky., December 29—[Special.]—Statistics compiled by W. H. Jones, chief mine inspector for Kentucky, disclose that the coal production of the State has more than doubled within the last six years. In 1921 the production was 30,282,659 tons; by the end of this year, it will have reached 71,229,000 tons, December output being estimated. The output in 1927 represents an increase of about 7,000,000

tons over 1926, when 64,130,955 tons were mined and shipped. Opinion is expressed by the head of the Kentucky mine department that, when figures are complete for the year, Kentucky will rank as the third largest bituminous coal producing State.

## Navy Contracts for Airplanes to Cost \$503,000.

Washington, D. C.—The Navy Department has contracted with the Loening Aeronautical Engineering Corporation, New York, for 20 model airplanes and spare parts at a cost of \$503,003, the planes to be equipped with air-cooled motors of 420 horsepower. The planes will be of the amphibian type and the engines made by the Pratt & Whitney Motor Corporation of Hartford, Conn.

## New York Interests Back Miami Bank—To Provide Capital for Agricultural Development.

Miami, Fla.—A charter has been issued to the City National Bank of Miami, which is in process of consolidation with the City National Bank and Trust Company of this city. It is reported the new institution is backed by New York interests, including J. C. Penney, Walter R. Comfort, Chester W. Cuthell, C. M. Keys and others. Mr. Cuthell and Mr. Keys are associated with the Glenn H. Curtiss Properties, Inc., which has holdings in Florida.

The new organization, it is said, will provide capital on a large scale for the development of Florida agricultural interests, and, according to Mr. Penney, who is chairman of the J. C. Penney Company and himself a large holder of Florida property, Miami will have another national bank with an additional \$1,000,000 of new cash capital and connections with strong New York bankers.

## \$10,000,000 Expended for Louisiana Roads in 1927.

The past year has seen added to the highway system of Louisiana more miles of improved standard highways and the starting of more important bridge projects than in any similar period.

During 1927 approximately 1000 miles of highway were added to the State system, 350 miles of road were completed at a cost of \$4,500,000. The maintenance division spent nearly \$1,000,000 bringing the other 650 miles up to standard and constructing some portions of it. Every important town and parish seat in the State, save Cameron, has an improved all-weather highway now and a road is being built to Cameron. The flood of 1927 cost the highway commission about \$700,000 in road repairs and the commission spent for maintenance in addition about \$2,000,000. These expenditures, together with moneys paid on other projects not completed, have brought the total expenditures by the commission to \$10,000,000, a figure which is about the same as last year.

The most important project completed during the year was the Interstate bridge and approaches on the Old Spanish Trail, connecting Louisiana and Texas near Beaumont. The most important projects put under way were the free bridges across the Chef Menteur and the Rigolets which will give New Orleans a free entrance from the east on the Old Spanish Trail. These bridges will cost about \$2,000,000 when completed.

As the year ended the commission had 500 miles of roadways under construction, the cost of which will amount to about \$6,000,000.

*The above review was not included in the State summarization in the Annual Highway Review Section of this issue because it arrived after that section had gone to press.*



## Improved Highways Speed the Nation's Development

**W**E have gone at building highways with the energy which has made the people of America the envy and admiration of the world. But we have made only a beginning as compared with what must be done. We must build more, better and wider highways.

To the building of highways this nation may well, for years to come, dedicate much of its constructive power and its wealth. Improved highways mean better health and better educational opportunities for all the people. Broader opportunities for the diversification of agriculture and for the increase of industry await good highways everywhere.

To the building of more highways, to the maintenance of those that have been built and to the extension of highways generally, the people of this land, and pre-eminently of the South, may well, with renewed zeal, throw into the work a spirit of initiative and of energy that will even surpass that of the past, with a full realization of what highways mean in the fullest development of the nation's opportunities.

*No man can study the information given in the following pages without a feeling of pride in the accomplishment of the technical, engineering and constructive forces of the country in promoting the welfare of the people and in aiding in the upbuilding of the nation.*



# MAINTENANCE—

## The True Test of a HIGHWAY PROGRAM

By

FRANK PAGE, Chairman,

North Carolina State  
Highway Commission,  
Raleigh, N. C.



A Lower Type Mountain Road Well Maintained.

**M**AINTENANCE is the barometer of any highway program. With unlimited money for maintenance, almost any type of road can be kept in serviceable condition. Location, selection of types, and construction of highways, finally meet their test in the question of maintenance.

Big sums of money were wasted in the early days of road construction, due to the erroneous idea that roads could be constructed so as to be permanent in character. People often inquire how long a certain type of road will last. No type of road construction has yet been found that does not require constant maintenance. The type of road and the fidelity of its construction, as well as the use to which it is subjected, determine the character and cost of maintenance. Sooner or later we will come to the point where the practical question is, whether it is more economical, considering cost and service, to maintain the existing road, or to build a new one.

The public has been strongly "sold" on the

higher priced types of pavement and are inclined to regard anything else as a makeshift. Yet, the cost of surfacing all of our highways with these high type pavements runs into so many millions as to stagger the imagination of the most ardent good roads enthusiast.

Should we use a pavement costing \$40,000 per mile, or shall we use a surfacing that can be applied for \$4000 per mile? The intelligent answer is to be found principally in a question of maintenance. Unquestionably, the cheaper surface, on many soils, can be made to give just as satisfactory riding qualities as the more expensive pavement. But, considering the traffic and weather, the two elements that immediately begin their unrelenting barrage upon every newly constructed highway, how will the maintenance, including interest on the capital investment of the two types, compare?

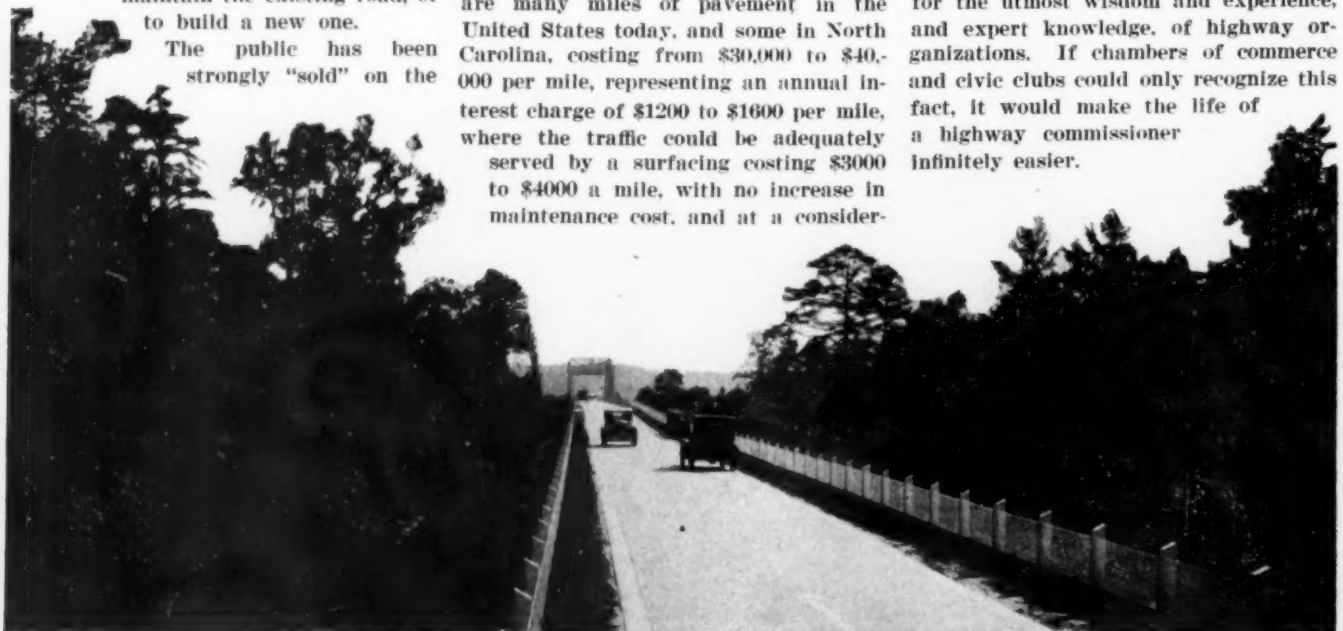
I have not the slightest doubt but there are many miles of pavement in the United States today, and some in North Carolina, costing from \$30,000 to \$40,000 per mile, representing an annual interest charge of \$1200 to \$1600 per mile, where the traffic could be adequately served by a surfacing costing \$3000 to \$4000 a mile, with no increase in maintenance cost, and at a consider-

able annual saving in capital investment.

Our constant aim in North Carolina has been to so select our types of surfacing as to cover the most miles of road with the least outlay of capital, consistent with reasonable traffic requirements, but always with an eye single to a minimum cost of maintenance, for maintenance, like the poor, death and taxes, we will always have with us.

Notwithstanding an increase of 7 per cent in mileage and an increase of 100 per cent in traffic on our North Carolina State System within the past three years, we have reduced our annual maintenance cost by \$500,000. Enough to cover interest charges on \$12,500,000 for our construction.

A finished road is impossible. The best we can do is to build a way to be maintained. The practical question of adjusting type and construction to traffic, so as to entail the smallest permanent burden upon the tax-payers, calls for the utmost wisdom and experience, and expert knowledge, of highway organizations. If chambers of commerce and civic clubs could only recognize this fact, it would make the life of a highway commissioner infinitely easier.



Sodded Shoulders Are an Important Feature of a Well Maintained Highway.



# Planning TOMORROW'S HIGHWAYS

Regulation of Traffic, Rather Than Changes  
in Road Types, Will Solve Congestion  
Problem, Highway Builder Declares

By

JOHN N. MACKALL,

Chairman and Chief Engineer,  
Maryland State Roads Commission.

THE motor vehicle has come to play a major part in the industrial and social life of the community because of the enormous saving in time from its use. Both passenger and freight vehicles have shown their ability to render quickly a service which no other means of transportation has been able to offer. The flexibility and the speed of these vehicles has brought this about. Looking forward not very far into the future, however, we see that increasing congestion upon the highways is threatening to take away from the motor vehicle its chief element of value. Naturally, then, those engaged in highway transportation, both as builders and as administrators of roads and builders and users of motor trucks, are looking to the highway of tomorrow.

Every day we see suggestions of things the highway of tomorrow will provide that the highway of today does not. The man on the street believes it must be a thing vastly different from that of today. Those who have made a fairly close study of the subject, however, believe the future highway is not going to be vastly different and that the thing which will chiefly distinguish it is the regulation of traffic which goes over it. I believe the general highway system of the future is not going to be so different from the general highway system of today.

## Private High Speed Toll Roads Suggested

It is inevitable that additional, parallel, high speed motor vehicle roads must be developed between the great centers of population. Because of the great amount of physical improvements along the right-of-way of the existing main lines, it is not going to be practical to develop these to any great extent. High speed, parallel lines over new right-of-way must be established and the question of how they shall be established, constructed and operated is one that merits the serious consideration of everyone engaged in motor vehicle transportation.

High speed routes must be established either as public highways or as private toll roads. These roads obviously can and should best be estab-

lished as toll roads, and, further, as privately owned toll roads. The major consideration in the planning and construction of these parallel auxiliary routes is the right-of-way. Before the right-of-way can be established, and often optioned, legislative authority must be obtained and with this legislative authority will come greatly increased theoretical values of the properties to be acquired. Private individuals, on the other hand, can option and in many cases secure the land necessary for the construction of these roads without a great deal of public notice, and they can even acquire excess land which can be developed or sold, to materially reduce the cost of construction. Assuming that private roads are going to be fairly administered and property acquired at fair prices, recapture clauses in the franchise will make it possible for the public to acquire these roads for toll operation whenever it seems desirable.

Such roads should be initiated as private roads and an adequate and fair return be guaranteed to the investors, or the necessary capital cannot be attracted for the purpose. The question most naturally asked in this connection is why these roads should be established as private toll roads when such existing roads have all been acquired, largely because of public demand. The difference seems quite obvious. Roads are government. The public is entitled to a good travelable road as a part of government, but the establishment of high speed automobile boulevards is more than government. It is giving to the automobile a sense of luxury and the ability to make much greater use of the road than otherwise, and the motorist should be willing, and in the writer's opinion is willing, to pay a fair toll for this added privilege. At no time do I believe toll roads should be authorized or constructed unless and until public roads already constructed, or to be constructed, have shown their inability to carry the spe-

cialized traffic which goes over them. As a matter of fact, on the Atlantic seaboard, there are many places today where privately or publicly owned high speed toll roads would attract sufficient traffic to pay interest and construction costs on such roads.

## Future Roads Pictured

Public roads in the future are going to be much more satisfactory for travel than they are today. The slow moving vehicle is not going to be permitted to clutter up the highway to the exclusion of other vehicles. Better roadbeds and wider right of way will be secured, so there will be parking space along the road without interfering with travel on the main lanes. Business places will be set back sufficiently far to provide for loading and unloading spaces. On private properties, stores and hotels will do likewise. There will unquestionably come a uniform system of traffic signals and uniform marking. Indeed, the transcontinental system of numbering worked out by the bureau of public roads and the American Association of State Highway Officials has already gone a long way toward bringing this about.

## Highway Development Fails to Keep Pace With Motor Transportation Progress

Traffic signals are at present set in a most haphazard way. In many cases no two corners in the same city have traffic signals set alike and in no two cities is there any uniformity. The force of public opinion is bound to correct this. The lack of co-operation between the authorities controlling traffic in the big cities has so far been a great drawback to uniformity. Grade crossing eliminations, bottle necks and traffic hazards generally will give way to more up-to-date traffic facilities. The highway is not going to be considered a highway in itself, but will be viewed only in the light of the service it renders to the public as a part of highway transportation. When this is done, however, it is my belief that we are not better off than we are today. A casual examination of the statistics for road development and motor vehicle development shows conclusively that the

highways are not keeping pace with the automobiles and that they cannot.

### *Existing Roads and Streets Not Used to Best Advantage*

In the year 1926 there was expended for public highways in the United States nearly \$1,250,000,000, exclusive of the amount spent in the cities. During the year we placed upon the highways approximately 4,000,000 new vehicles and added about 2,000,000 to the total vehicles upon the public roads. I think we will agree that the expenditure of \$1,250,000,000 annually for roads challenges us to make the greatest use of these roads after we have built them. This we are not doing. There are two outstanding needs, both of which have to do with traffic regulation. One is the moving of the vehicular traffic over the public highways and the other is caring for the parked vehicle after it has ceased to move. These two problems must be met and solved before an adequate use can be made of the highways, and it seems inevitable that they must be solved by regulation of the individual automobile.

With the improved highway, with the best highway we can afford to build for tomorrow, we are going to be no better off, if as well as we are now, unless there is regulation of the traffic over them. Vehicles must not be permitted to park on the traveled way, vehicles must not be permitted to come from side roads into the main roads except when the right of way can be secured without interference with the main line travel, and the slow-moving vehicle must be eliminated. When we have done these three simple things, none of them involving a great deal of money and none involving great personal inconvenience to any automobile owner, we have automatically doubled the availability of our highways.

As evident as it is to everyone that with the so-called boulevard system the right of way is necessary, legislatures are extremely reluctant, if not entirely opposed, to changing the existing right-of-way law. Legislators are very slow to prohibit parked vehicles from the line of travel and they are even slower to establish minimum speeds in lieu of maximum. The problem in the city is an even greater one and it is not being successfully attacked by any municipality. The cities are perhaps entirely within their rights to say that it is no more their business to provide parking space for automobiles than it is to provide residences for their inhabitants, and perhaps it is not, but the automobile as an individual means of transportation furnishes a great asset to every city and it cannot afford to neglect the benefit which the city at large obtains from these automobiles.

City planners talk about decentralization, they talk about buildings of to-

morrow containing parking spaces for automobiles, all of which it seems is beautiful in theory, but largely impractical. If we began tomorrow to decentralize the business center of any large city, and if everybody honestly tried to carry it out, it would take 20 years to see an appreciable effect upon this decentralization. But we are not going appreciably to decentralize our cities. Many towns and cities are going to have only one courthouse, which means that those having business with the courts are going to be in that vicinity. This means that the persons having business to do with those who mostly frequent the courts, that is, the lawyers, are going to be in the vicinity of these lawyers, and it just takes this much analysis to see that we are not going to decentralize our cities very greatly.

We are not going to get anywhere by providing parking spaces in the buildings for the tenants of these buildings, for the simple reason that the space necessary for automobile storage is the most desirable and most profitable part of any building. We are not going to widen the streets in the congested parts of our cities and towns; we cannot do it without entirely rebuilding the cities. Everyone agrees that the great menace to the efficient operation of motor vehicles in cities is the parked automobile and those looking for places to park. The problem, then, seems to be to provide spaces for automobiles to park. Obviously, this can be done more economically by the municipality than by individuals. If it is desirable and if it can be done more economically by the municipality, it ought so to be done. I don't mean that parking spaces for automobiles ought to be provided without cost, but I do think that every city should and must provide parking space for automobiles at cost.

### *Public Garages Should Be Provided to Relieve Traffic Congestion*

Public garages built and operated by the city would, first, be exempt from taxes and, secondly, money for financing could be obtained at approximately 4 per cent as against 6 per cent for private individuals. The city, with its right of eminent domain, can acquire by condemnation or otherwise property most desirable for garage purposes. If every city would provide at cost garage space to all who desired to use it, it could then with propriety say to its citizens that you must place your automobiles off the public street in the garages we are providing at cost, and if you cannot afford to pay that, then you must leave your automobile outside the congested district. The only thing, then, that it would actually cost the city to provide these parking spaces would be the loss of taxes on the property used for the purpose. In-

deed, in many cases the city owns and is using for other purposes properties within the congested district which could be converted into garages and the buildings used for garages in conjunction with the present use. How many such garages and how close together they would have to be located would depend upon the demand for their use. They would only need to be built as fast as the demand developed, and there are, of course, many automobiles now parked all day within the congested area of the cities which have no business to be there. In many cases the owners would be unwilling to pay the actual garage cost, but certainly there would be no impropriety in denying them the use of the public streets.

If there were enough space on the streets to accommodate the automobiles who desire to park on them, there could be no objection to their use, but there is no city, no town, no village today which has sufficient parking space on its public streets. Wide streets where parking is permitted are no more useful than narrow streets. If they are wide enough for two lines of parking and one line of travel, there seems to be double parking, and if there is room enough for two lines of parking and one for travel, triple parking is not unusual.

How soon the public will be ready for such regulation remains to be seen. The public has taken most unkindly to automobile regulation because they have seen no benefits. They will not see it until regulation becomes in fact sufficiently vigorous to better conditions.

### *Conclusion*

The highway of tomorrow is going to be controlled and regulated, not in the interest of any one person, but in the interest of all the automobile users, which really means all of the public. The municipalities are going to be forced to provide garage space, and the public is going to be forced to use it. Vehicles, when they come out of these garages, are going to operate as rapidly and directly as possible. Regulation is going to be in the interest of all the motorists, so that the theoretical benefit, that of quick transportation by automobile, is going to come because the streets will be used for travel and not for storage. On the country highways and on the roads between the centers of population, there will be sufficient space for the operation of the necessary lines of vehicles to care for the traffic and traffic is going to be compelled to operate at a sufficiently high and uniform speed to see that the maximum use may be made of these highways. We are going to forget what we call our individual rights, we are going to merge all our individual rights into the rights of the automobilist as a class and we are going to make our highways render the maximum service.



# Co-ordinating TRAFFIC CONTROL With Proper CITY PLANNING

By  
HERBERT S. SWAN,  
City Planner, New York.

**T**RAFFIC conditions are so acute in many cities that they are unstabilizing the old-established business centers—in some cities, they even threaten the supremacy of the central shopping district. Nearly everywhere, they are reshaping the commercial and industrial life of the community; yet, few persons probably realize the full effects of these forces.

The president of a large bank in a city of over half a million population reports an appreciable decline in the number of safe deposit vaults leased by his institution, because of "the impossible traffic conditions in the center of the city and the inability of customers to get to our office in their motor cars, and who, therefore, are compelled to seek community banks with safe deposit facilities for their use and occupancy." Suburban banks and trust companies are being organized in increasing numbers to compete with the old established financial institutions downtown. These, in turn, to hold their advantage, are being more and more pressed to establish branches in the suburbs.

Neighborhood movies as well appointed as any in the central shopping district are invading residential centers. In some instances, the downtown amusement centers have all but disappeared.

The local department store around the corner formerly was seldom resorted to except in emergencies when there wasn't time to go downtown. Now, it gives a good account of itself; the big main street department stores, at first loath to recognize these annoyances, are now financing garages for daytime storage of cars to offset the advantage their suburban competitors have in free parking in the city streets.

Illustrations such as these can be multiplied almost indefinitely. Even in small towns, the automobile is leaving its stamp upon the development of the community.

It may be remarked that decentralization in business is something to be desired. This may or may not be true, but who would say that the decentralizing transition that is taking place today is being directed in a manner to avoid the repetition of past mistakes? Within a few years, will not the congestion about new business districts be as bad as that which now characterizes present centers? Are we not in many

instances merely shifting the site of our business sections from one location to another? What guarantee is there through scientific planning and direction that the new will be permanently better than the old?

These are questions that confront nearly every community. One city after another is discovering that it is impossible to answer them without engaging in comprehensive planning and zoning. How to control traffic, how to protect both pedestrian and automobilist and how to keep traffic moving through the streets are problems tormenting the officials and citizens of practically every community. Semaphores, central standards, flashing beacons, block signals, paint lines—these and many other traffic aids have been brought into use, helpfully, it is true, and yet not so helpfully that the acute situation created by having from 5000 to 15,000 vehicles pass through an intersection every 24 hours has been satisfactorily remedied.

Traffic congestion is not a local complication, curable by first aids; it is usually a deep-rooted condition affecting the traffic arrangements throughout the city. Parking, one-way streets, left-hand turns, the separation of fast and slow traffic, the re-routing of trolleys are considerations that must be studied in conjunction with the requirements of a comprehensive plan of traffic control. To prohibit parking in this street, to prohibit two-way traffic in that street, to prohibit a left-hand turn there—all without an all-inclusive plan of traffic control—is merely to temporize with one of the biggest problems confronting the municipality.

Not until thoroughfares are planned and traffic regulated with reference to the fundamental characteristics of the motor vehicle will streets become efficient and safe for both pedestrians and vehicles. We must consider thoroughfare design and control of traffic in its relation to the variety, number and speed of vehicles which the street is to carry. To utilize a street to capacity we must, of course, know what its capacity is. Before building new streets we must be sure that the existing ones cannot, through improvement in the

regulations affecting traffic, be made to serve the ultimate volume of traffic for which provision must be made.

A far-reaching program designed to improve traffic conditions must, of course, consider the capacity of existing thoroughfares in relation to the present and future demand for roadway space. In other words, where improved regulations and control over traffic will sufficiently increase the vehicular capacity of streets, their capacity should be increased through the installation of such regulations and control and not through widening streets or cutting through new streets.

In some instances, the installation of new methods of control may relieve the congestion of a street quite as effectively and at far less expense than will increased street width. In other instances, the traffic demand within a few years will be so intense as to make desirable the immediate widening or cutting through of streets for which there may today appear to be little justification. For these reasons, it is clear that in formulating a program of permanent traffic improvement the routing and controlling of traffic must be kept no less in mind than the width and arrangement of the thoroughfare.

## *The Traffic Survey*

What should or should not be done to relieve congestion at a particular intersection or on a particular street can be determined only after a careful survey of all factors affecting its traffic. This survey should include an examination of the physical design of the several intersections and streets throughout the city as well as a painstaking analysis of the character and distribution of their traffic. In so far as the survey concerned itself with the street plan, its object would be the development of a major thoroughfare plan. This would involve, among other things, a study of the defects in the existing street plan to determine which streets should be widened and extended; the development of a skeleton thoroughfare plan for the unsubdivided areas in the vicinity of the city to control future subdivisions; the location of new bridges, tunnels and viaducts; the improvement of street grades; the establishment of building lines on various streets; the determination of desirable crossings under or over railroad tracks; the treatment of complicated street in-

tersections; the formulation of proper cross-sections for streets dividing them into satisfactory roadway and sidewalk units. In so far as the survey considered traffic, its object would be the development of a proper program to deal with such subjects as parking; the re-routing of different kinds of traffic; the separation of fast and slow traffic; the establishment of one-way streets; the prohibition of turns; the routing of trolleys, trucks and buses, and the installation of appropriate traffic signs and signals.

No ex parte prescription can be laid down for congestion. It has numerous causes. As a general proposition, it has its origin rather in innate defects of the street plan than in the volume of traffic. Yet, because of the prohibitive expense of street improvements involving the taking of land in built-up sections, the remedy for congestion has to be found, as far as possible, in police regulations rather than in costly widenings and extensions.

### Parking

In our various traffic surveys we have frequently found that even during the rush hours the number of cars parked on the main traffic streets far exceeds the number of moving vehicles on them during any one instant. Frequently, the parked cars outnumber the moving cars within a block or two, and even three to one. Since the day Henry Ford turned out his millionth car, the parking question in our streets has been one of increasing acuteness, and now that our automobile factories are capable of producing upward of 20,000 cars and trucks per working day, each annual crop of new cars complicates the parking problem as much as the aggregate automobile production of all the years preceding the war put together.

In 1916, there were 3,512,996 motor vehicles licensed in the United States; in 1926, there were 4,219,442 automobiles and trucks manufactured by our domestic producers. When producing their maximum output, the automobile companies of the country turn out as many cars every day as are registered at present in the city of Hartford.

To prohibit parking on some streets would, no doubt, seriously embarrass the conduct of certain businesses; to allow parking on these very same streets, on the other hand, frequently seriously embarrasses the movement of through traffic. Under such a broad range of conditions, it is obvious that there is no universal or infallible solution to this difficult problem—each street must be studied with reference to its own needs.

### Thoroughfare Planning

Nearly every municipal council is keenly alive to the parking problem;

almost every session of the council sees some amendment in the parking regulations. Much of this legislation is wasted effort, since it merely temporizes with an evil and leads to so little really constructive action. The present concern that traffic problems are causing should lead to better city planning for the future. Yet, what do we find? The very same council that will spend two hours debating a parking ordinance affecting only a single block or street will approve, without change or comment, any kind of subdivision plat that a speculative developer may submit to it. And yet who would say that whether vehicles may park for 20 or for 40 minutes on a particular block is more important to the future of a community than the street plan itself?

The plan of a city, one might almost

### Major Traffic Problems May Be Solved by Zoning and City Planning.

By Leslie J. Sorenson,  
City Traffic Engineer,  
Chicago, Ill.

Through proper regulation and control the maximum use of the existing roadways may be obtained with the greatest degree of safety and the elimination of conflict between the various classes of street users in our congested city districts can be obtained to a great extent. But the physical improvement by the widening of roadways, the opening of new arteries for travel and the segregation of the fast and slow moving vehicles and mass carriers by two level streets, grade separation, etc., is a problem of greatest magnitude and falls into the classification of municipal activity known as city planning and zoning, which I believe is the ultimate solution of our major traffic problems.

say, is the collective plan of its numerous subdivisions. A city that has been successful in obtaining subdivisions which are not only in themselves well designed, but which also dovetail into and complement each other in a satisfactory manner, has taken one of the most important and substantial steps toward the ultimate realization of an efficient and comprehensive plan. The streets, blocks and lots into which an area is subdivided are the constituent elements of every plan. Whether a city has a well-functioning plan depends upon the organization and relationship of these elements to one another. Once the land is laid out without consideration to the circulation of traffic or to the ultimate use of the land, irretrievable damage has been done to the future city plan. There is only one way in which a city can

secure a satisfactory plan, and that is by having its plan antedate the subdivision and development of its area. Then, its territory will be planned right from the very start.

### Traffic Control and the Street Plan

Maladjustments in the street plan are, of course, directly reflected in traffic conditions throughout the city—some streets must carry more traffic than their fair load, while others, because of the inconvenience and danger incident to their use, carry less traffic than they should. Where traffic, through improperly located or disconnected thoroughfares, is misdirected to its destination, the unavoidable result is not only a slowing up of traffic movement, but also an inordinate amount of traffic turning at intersections.

One thing appears quite obvious: Improvements in traffic regulations must hereafter be more intimately coordinated with improvements in the street plan itself than has heretofore been the case. There is a limit to increasing the capacity of a street or of an intersection merely by changing the traffic regulations, no matter how desirable such regulations may be in themselves. The prohibition of left-hand turns, the establishment of one-way streets, the installation of flashing beacons and electric synchronous or progressive control are all very good in themselves, but there are some things that they will not cure—they will not remedy defects in the street plan itself. Traffic can never be properly routed through improperly planned streets until corrective measures have been applied to the streets themselves. Until this is done, traffic is bound to congest certain streets. To postpone permanent improvements in the thoroughfares in such instances is merely to make these improvements all the more expensive, and financially less possible.

In the meantime, with the steadily increasing volume of traffic, it is only a question of time when these temporary expedients will be completely swamped in controlling the situation. To say this is not to discourage the adoption of the most scientific traffic regulations; it is merely a frank realization of the fact that street congestion is due to various causes and that, until each cause is properly diagnosed, it is unlikely that a proper remedy will be found for it.

Belief that the center of gravity in automobiles can be lowered more than it is at present by combining the body and frame in one unit and that this procedure would tend to make a car more safe was recently expressed by E. F. Brase of the Harris Motor Car Company, Cape Girardeau, Mo.



# Fundamentals of TRAFFIC Regulation and Control

By  
HAROLD M. GOULD,  
Transportation Engineer,  
Detroit, Mich.

FOR a number of years, the demand upon our streets and highways has been steadily greater, due to an increase in the number of motor vehicles. And thus has come an increase in the number of conflicts between vehicles, between vehicles and pedestrians, and between vehicles and immovable objects. The results are: Slaughter of human beings and dumb animals, untold pain and suffering and an enormous amount of property damage.

Except in a very few instances, there seems to be no coordinated plan of action. Individuals, civic organizations, private organizations and public officials have their respective pet theories for traffic improvement and accident reduction—these theories being for the most part of an opinionated type, or, worse still, of a selfish type. Any thought of ascertaining facts for use as a foundation upon which to build a structure of remedial measures appears to be poisonous.

There are proponents of courtesy education of motorists; stricter examinations of applicants for drivers' licenses; greater police enforcement; heavier court penalties for infractions of the traffic law; prohibition of parking in the business districts; no restrictions as to parking or restricted parking in such districts; more traffic signals, fewer traffic signals; prohibition of lefthand turns; similar action for righthand turns; unrestricted allowance of both classes of turns; regulation of pedestrians; grade separation for pedestrians or vehicles or both; double, triple, quadruple, quintuple and even sextuple decking of streets.

And, yet, it would be interesting to know the number of places where all these elements have been discussed around the same table and a program decided upon, even if such a program took on the nature of a compromise.

A seriously intentioned, representative attended, roundtable-developed program from which have been divorced all the elements of politics, petty jealousy, selfishness, personal advertising and pet hobbies is the fundamental requisite of sane and commonsense traffic control and regulation. A program developing from such a family council should not necessarily be a community feature, because the same principles hold true with respect to counties, States and the Nation itself.

After the family council is in agreement that some action is necessary, the "fact-finding" doctor should then be

called in—the doctor in this case being a traffic engineer, or, better still, he might properly be termed a traffic research director. His knowledge of drafting, pure and applied science, and traffic control and regulation must be, because of the nature of his work, augmented by some knowledge of human nature, finance, economics, city planning, local ordinances and State statutes, business conditions and trends, and, if by chance he is called into the picture prior to the family council-meeting, he must be a salesman of the hand-shaking, back-slapping and story-telling type, in order to "sell" to his constituents the principles—sometimes, the fundamentals—of his profession.

In addition, he must have the attributes of tact, enthusiasm, patience, perseverance and ingenuity developed to a high degree, because the nature of his profession makes such a course very necessary. Someone may say that these specifications for a traffic research director are impossible of fulfillment. Such is not the case, however, if it is borne in mind that the compensation to be paid should be commensurate with the amount and kind of the work to be performed. In other words, specialists in law, medicine, dentistry and other professionals command salaries comparable with the knowledge required and the services demanded. Similarly, traffic specialists can justify salaries of the specialist class.

Large and medium sized cities can afford to hire traffic specialists and not quibble over the salaries. Small cities, towns, and villages cannot, perhaps, afford to hire the full-time services of a specialist; but, the exigencies of the situation would warrant part-time service and this might be provided by a group subscription on the part of several neighboring villages, towns or small cities, or it could be made a county affair.

Closely allied with the employment of a traffic research director is the position the police department traffic officers take in the control and regulation of traffic. Rule of thumb methods of control and regulation must disappear and be replaced by the same type of skill in traffic matters that police departments find necessary in the prevention and detec-

tion of crime, such as chemists for blood-stain investigation, finger-print specialists, firearm specialists, specialists for the installation and operation of police telegraph, telephone, automatic traffic signal and radio broadcasting systems, etc.

The Detroit police department recently has completed a traffic survey and during the time the work was in process the commissioner and certain of the officials of the traffic division took a lively interest in it. In addition, many of the field tallies, a good share of the office statistical work, some of the drafting and practically all the field supervisory work were done by 11 traffic patrolmen assigned to the survey bureau. Seven of these patrolmen are still connected with that bureau and their outlook on traffic matters has been completely changed. Their practical work has been supplemented by applied theory, with beneficial results to themselves and an anticipated future benefit to the community. These points are brought out to show what can be done within the police department, if the urge is present. It is believed that beneficial results always can be obtained by combining traffic theory with practice in the police departments.

To recapitulate: The traffic death rate, injury and property damage record warrants the employment of engineering specialists to better the present conditions of traffic control and regulation. Certain cities can afford to hire specialists for full-time work. Smaller communities may find it expedient and economical jointly to employ a specialist, as the results obtained from such part-time service will be of a higher order than will be obtained from the full-time service of a person not having the qualifications of a specialist. The specialist must have some knowledge of human nature, finance, economics, city planning, ordinances and statutes, business conditions and trends. He must be tactful, enthusiastic, patient, persevering and ingenious. The employer must expect to pay a just and reasonable compensation to attract and retain the services of a specialist.

Finally, the community, acting through its various organizations, public and private, must provide such background of consistent traffic thought and action as to eliminate all evidences of politics, petty jealousy, selfishness, personal advertising and pet hobbies.

# VIRGINIA Prefers "Pay-as-You-Go" Plan of Financing Road Building



By

HON. E. LEE TRINKLE,  
Former Governor of Virginia,  
Roanoke, Va.

THE Pay-as-You-Go method of highway construction has for some years been in active operation in Virginia, where it is thought to have abundantly justified itself through its results. The State highway system, comprising approximately 5400 miles of road, is under continuous maintenance and all roads are travelable throughout the entire year. There are, in addition, 12,000 miles of roads in the county road system.

The question as to means whereby funds should be secured with which to carry on road building in Virginia came to a focus during my administration as Governor, when the matter of a road bond issue was placed before the people in a referendum. This was defeated by a majority of 40,000, the opposition to bonds being headed by former State Senator Byrd of Frederick county, now Governor of Virginia.

Having decided upon the policy of Pay-as-You-Go, it became necessary for the General Assembly to determine methods of taxation through which sufficient road revenues could be raised. The most equitable plan, it seemed, was to levy a special tax on gasoline and motor vehicles, and the motor vehicle license tax, formerly levied on a basis of horsepower, was changed to a basis of weight. This method appears to be becoming popular in many States, as placing the heavier tax on the heavier car.

Under the present plan of the gas tax in Virginia, from which revenue alone the State this year will derive something like \$7,000,000, two-thirds of this levy goes to the State highway system and one-third to the county roads, while Virginia, like other Commonwealths, also benefits under the Federal aid. The State also employs all able-bodied male convicts on its highways, and this plan is said to save approximately \$500 a day.

It was my good fortune while Governor to secure for the State the services of Henry G. Shirley as chairman of the State highway commission, and under

his direction Virginia has forged rapidly to the forefront in the construction of highways. Mr. Shirley is regarded as among the premier road authorities in the United States.

With regard to the two methods of highway financing, the one through the flotation of bonds and the other through taxation, each plan doubtless is possessed of advantages. North Carolina has adopted the bond plan, which, while serving to supply more immediate, ready funds, carries the factor of postponing to some later day the necessity of retiring heavy bonded obligations. Governor Byrd recently announced that \$32,000,000 will be available for State road purposes from all sources in Virginia during the next two years. This fund will have been secured under the Pay-as-You-Go plan, and seems to me to be sufficient for road purposes, amounting, as it does, to \$16,000,000 each year.

The virtue inherent in the Pay-as-You-Go plan lies in the fact that there is no postponement of payment, no shifting of responsibility, no bonded obligation left as an inheritance to coming generations. Under the Pay-as-You-Go plan, funds for roads have been secured, highways have been constructed, the whole transaction when completed has been closed. Road bond issues are insidious. If indulged in, their tendency too often is to invite extravagance. They carry, also, the inevitable burden of interest charges and automatically necessitate a sinking fund for their retirement. It is much more easy to spend than to save, to borrow than to economize and to earn. For these reasons, if a State road system can be completed within a reasonable time without the handicap of an issuance of bonds, it seems to me that sound business judgment commends such method.

It is estimated by the highway commission that the Virginia State road system will have been completed within the next two years. If this be true, then the virtue of the Pay-as-You-Go plan will

have been abundantly vindicated, Virginia's highways will have been finished and its people will be free of any burden of bonded debt for roads. An argument employed by bond advocates is that tax levies, unless exorbitant, cannot supply funds in sufficient quantities for the purpose desired. That Virginia's road funds have been found ample is demonstrated by the fact that its highway department is at all times actively engaged and operating on a capacity basis. A report recently issued by Thomas H. MacDonald, chief of the Federal bureau of public roads, is to the effect that Virginia has a balance of \$1,674,225.98 unexpended funds to its credit in the Federal-aid road fund at the close of the last fiscal year.

During the last two years the State highway commission has concentrated its activities largely on what is known as State Route No. 31, which reaches from the national capital to the North Carolina line. This route extends for a distance of 204 miles and forms a section in National Highway No. 1, reaching from the Canadian border to Florida. The section of the route in Virginia stretching from Washington to Richmond was thrown open with appropriate ceremonies at Fredericksburg last May. The completed route, reaching from Washington to the Carolina line, was formally opened November 26, on which occasion I enjoyed the pleasure of being present with the Governors of North Carolina and of Virginia.

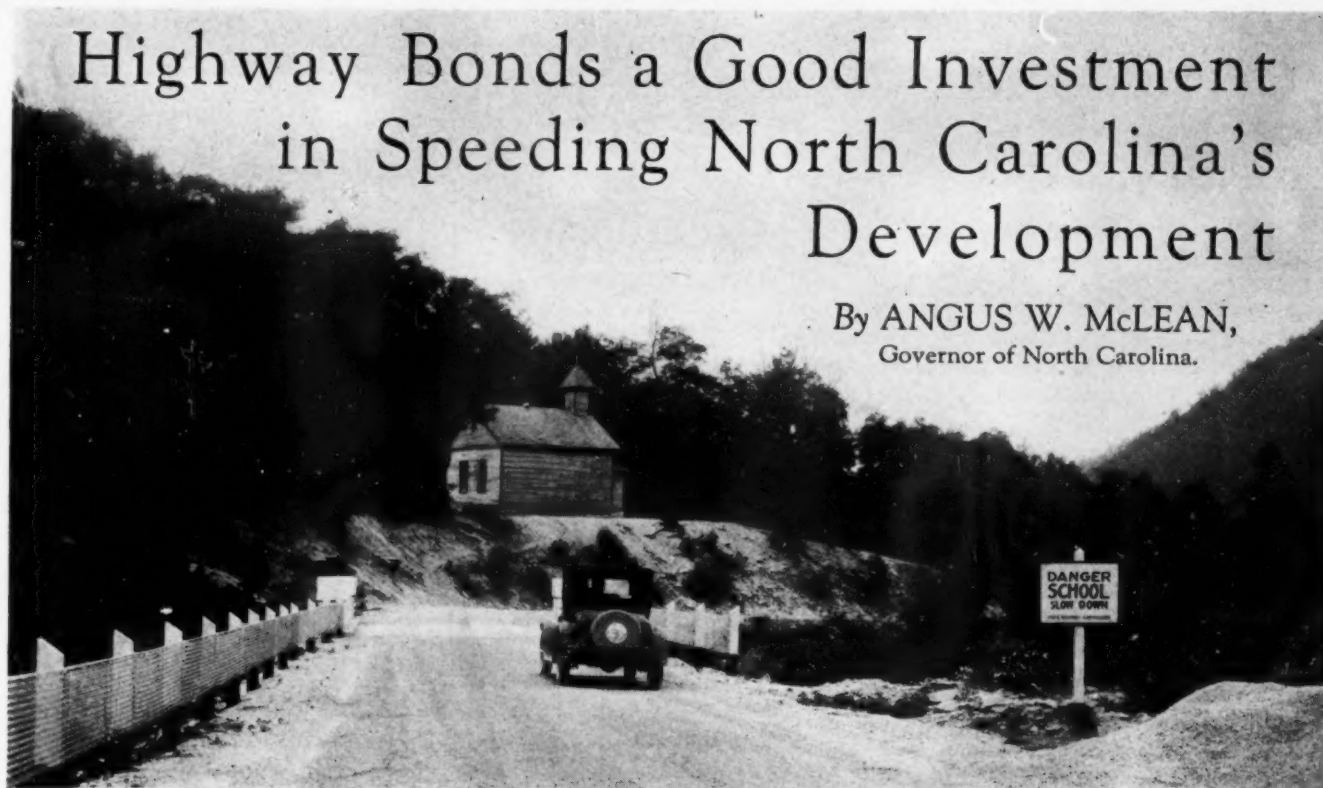
This highway in many places runs in a direct line, virtually without curve, for distances of from five to six miles and practically all railroad crossings have been eliminated along the whole stretch. The old route, through engineering skill, has been shortened 40 miles between Washington and the town of South Hill.

Under the Pay-as-You-Go method of road building, Virginia can boast a hard surfaced highway extending from the West Virginia line, north of Winchester, to the Tennessee-Kentucky line, at Cumberland Gap. This roadway, which extends 456 miles, is probably the longest stretch of continuous bituminous macadam within the limits of any one State in the country.



# Highway Bonds a Good Investment in Speeding North Carolina's Development

By ANGUS W. McLEAN,  
Governor of North Carolina.



**N**ORTH CAROLINA'S highway system, embracing 7500 miles, of which half has been hard surfaced and the remainder improved according to other modern methods, at a cost of approximately \$140,000,000, has not imposed and will not impose any burden whatever upon property owners. With the exception of the amount received from Federal aid, local contributions and the surplus derived from ordinary income, the system has been built through funds obtained by bond issues, the interest and principal of which are being paid by the users of motor vehicles on the highways.

The receipts from taxes on gasoline and motor vehicle licenses are sufficient: (a) To pay the costs of administration of the highway system; (b) interest on all outstanding highway bonds issued and authorized; (c) a sum sufficient to pay sinking fund and serial payments, for retiring the principal of all bond issues within a period of 25 years from the present time; (d) full maintenance of the entire highway system according to the most improved standards, and (e) to produce a surplus for additional construction of about \$4,500,000 annually.

North Carolina's method of financing the building of State highways, largely upon the bond issue plan, is economically sound and no valid objection can be made thereto.

The State started its real road-building program in 1921, when the General Assembly provided for a \$50,000,000 bond issue for the construction of a "system of dependable highways connecting every

county-seat and principal city in the State." The 1923 session provided for a \$15,000,000 bond issue, that of 1925 a \$20,000,000 bond issue and in 1927 added \$30,000,000, making a total of \$115,000,000. Because of this available money, North Carolina was able to secure, in part, apportionments from the Federal Government during the period since 1921 and including the 1928 estimated apportionment, of approximately \$11,000,000.

One of the chief arguments in favor of building roads rapidly by the bond issue plan is that the use of the road pays for its construction. The man who operates an automobile pays an average of \$32 annually to the State in taxes, approximately half of which is the annual license tax and the other half a 4-cent tax on gasoline he consumes. Instead of following the "pay-as-you-go" plan, we have found it much more satisfactory to "pay as you ride."

The fact that we have large sums of money available for road construction is important in attracting prominent road-building contractors from other sections. This offers unusual competition, naturally reducing the price at which we have purchased our labor and material, and substantially decreasing overhead charges, on completion of the program.

Probably no more striking value of the bond issue plan of road construction can be found than in the 300 per cent increase in the number of automobiles operated in North Carolina during the six years since the highway program actually started. In 1921, when the first \$50,000,000 bond issue was authorized,

the registration of motor vehicles in the State was 135,000. The number registered in 1922 was 166,000; in 1923 it was 211,000; in 1924 the number reached 288,000; in 1925 it was 341,000; in 1926, 384,000, and in 1927 the registration reached 434,000. Of course, a normal increase in the number of automobiles was expected, but it is unreasonable to think that the number would have increased at such rapid rate if the State had built only a few scattered stretches of hard-surfaced roads on which they might operate.

The bond plan proved so satisfactory and the income was so much larger than had been anticipated, due to the unexpected increase in the number of automobiles, that the 1927 General Assembly provided that the North Carolina Highway Commission take over, in its discretion, an additional 20 per cent to add to mileage then composing the State highway system. Up to this time, about 900 of the 1200 miles has been taken over and is being developed and maintained by the Commission, the remaining 300 miles to be added in due time. This permits a further rounding out of the State system and extending it so it will be of further service to the citizens living in remoter sections of the State.

During the six years since the State Highway Act became effective in 1921, at the same time the first big bond issue of \$50,000,000 was authorized, the State has received over \$60,000,000 in gasoline and motor registration fees. In 1926 these taxes amounted to \$13,616,925.58, and in the last six months of 1927 the

receipts amounted to over \$7,000,000.

North Carolina's first big move toward highway construction in 1921 came at a very opportune time. During that year and the next the country was going through the throes of post-war deflation. Many of the industries and businesses that had been thriving were forced to close their doors and curtail their operations as a result of the restrictive policy of the Federal Reserve system. North Carolina was enabled by the \$50,000,000 bond issue to throw herself into this breach, utilize the surplus labor in her highway construction program and thus keep this State in the "business good" class.

So far this discussion has dealt with the satisfactory results obtained by the bond plan of road construction. There is still another side, and a very important one, dealing with the methods and manner of paying off the bonds when they fall due and whether or not the bond issue plan is in keeping with sound business, particularly with reference to financing highway construction.

States and municipalities, as well as corporations and individuals, are entitled undoubtedly to the boon of credit. The wisdom of borrowing is always passed upon by the lenders; if borrowing is justified in a given case, lenders will be found. North Carolina has attempted to conform her borrowing to the principles which underlie successful borrowing by business corporations. It has placed safeguards for the security of investors and the protection of the motor vehicles ratepayers, through conferences between experienced public officials and representatives of banking and investment interests. The Constitution has been amended to place a limit of 7½ per cent on the total amount of State indebtedness. The full faith, credit and taxing power of the State has been placed behind every bond and note issued. Revenues from motor vehicle and motor fuel taxes have been pledged, as additional security to the bondholders. The gasoline tax of 4 cents a gallon is paid cheerfully and willingly by the citizens of North Carolina, as well as by many motorists from other States, who are glad to pay the tax for the privilege of driving over this State's splendid roads. No payment is permitted to take precedence over the required payments from highway revenues on the interest and principal of highway bonds and the sinking funds, except a small amount for highway administration maintenance and the cost of collecting the revenues.

Since 1921 North Carolina has issued \$95,000,000 of the \$115,000,000 authorized and \$10,000,000 bond anticipation notes for highway construction.

One of the objections often heard to the use of State bond issues to finance

its highways is the fear that, with such a large amount of money at their disposal, members of the Highway Commission would be tempted to indulge in extravagance and unnecessary work, or to favor certain sections of the State at the expense of others. It is undoubtedly true that haphazard work and planning consort very badly with a plentitude of funds. North Carolina realized that danger in the beginning, and before any bonds were issued had planned and marked off with great care a complete State system of roads, systematically laid out for the good of the people of the State as a whole, and yet with fair

distribution of advantages to the district divisions of the State. Also, North Carolina has been fortunate in having on its Highway Commission a group of successful and solid business men, furnishing all of the qualities needed to make a success of the task they have brought so satisfactorily to this point.

It may be seen, therefore, that North Carolina's plan of road construction by bond issues not only has worked, but also has proved entirely satisfactory. Undoubtedly, the bond issue plan has been 100 per cent effective, and it is approved not only by the people but also by the investors in our securities.

## \$241,597,000 in Southern Road Contracts Awarded Last Year.

CONTRACTS awarded for road, paving and bridge work in the 16 Southern States in 1927 amounted to but \$6,500,000 less than the high-water mark of the previous twelvemonth. The figure representing "contracts to be awarded" in 1927 shows an increase of approximately 75 per cent over the 1926 total, while figures running back to 1922 become interesting in their meagerness. Contracts awarded in 1927 ran to \$241,597,500, as against \$248,379,500 in 1926. The contracts to be awarded in 1927 totaled \$806,513,000, as compared with \$466,486,000 in 1926. These figures obtained from items published in the Daily Bulletin and in the construction columns of the MANUFACTURERS RECORD do not include individual projects involving expenditures of less than \$10,000, nor has any attempt been made to estimate the cost of projects for which reliable figures were not actually available.

While July led all the other months in the total of contracts awarded in 1926, with \$34,447,500, September claimed that distinction in 1927, when work aggregating \$41,495,000 was allotted. This one-month record of \$41,000,000, indeed, is the largest for any one month that has been attained to this time.

Great as has been the expansion of industry and business in the South in the past five years, road and bridge building in the Southern States has kept proportionate pace, and the aggregate for the five years of 1923-27, inclusive, has passed the billion-dollar mark, the announced contracts awarded having run to \$1,086,000,000, while work not mentioned in the Daily Bulletin or the MANUFACTURERS RECORD, because of the absence of authoritative, accurate figures, undoubtedly would swell that total by a very substantial percentage.

Issues of road and similar construction bonds by Southern States and their political subdivisions continued through 1927, and found ready, even eager, purchasers in the money markets. Conservatism and foresight have been made foremost features in such issues, with sound provision for interest charges and amortization, and this fact has been largely contributory to the continued ability of the Southern States to finance road building and to expand that work.

The subjoined tables show the road-building program of the South as suggested by the award of contracts and the announcements of proposed work during the past six years:

COMPARATIVE RECORD OF ROAD AND BRIDGE CONSTRUCTION IN THE SOUTHERN STATES.

	Contracts awarded 1925	Contracts awarded 1926	Contracts awarded 1927	Contracts to be awarded 1925	Contracts to be awarded 1926	Contracts to be awarded 1927
January .....	\$11,941,128	\$15,507,000	\$21,291,000	\$26,293,279	\$39,692,000	\$49,126,500
February .....	6,650,827	16,599,000	9,872,500	12,229,435	51,233,500	41,863,000
March .....	15,002,850	28,679,000	19,603,500	11,762,480	37,921,000	154,085,000
April .....	26,082,459	22,722,000	18,901,500	16,012,509	40,630,000	54,947,000
May .....	22,243,988	17,339,000	18,515,000	12,511,130	32,998,500	91,488,500
June .....	14,498,730	19,129,000	18,204,500	20,840,746	25,693,000	49,721,500
July .....	17,274,240	34,447,500	24,720,000	25,068,957	40,477,000	63,356,500
August .....	17,112,139	16,452,000	21,735,000	10,340,926	12,536,500	63,050,000
September .....	30,215,109	25,128,000	41,405,000	22,791,804	51,462,500	75,618,000
October .....	26,245,218	23,882,500	15,271,000	39,514,284	27,133,000	55,308,000
November .....	37,196,298	8,427,000	13,212,500	112,593,820	67,053,000	56,148,000
December .....	13,255,105	20,067,500	18,776,000	75,876,667	39,656,000	51,801,000
<b>Totals .....</b>	<b>\$237,718,089</b>	<b>\$248,379,500</b>	<b>\$241,597,500</b>	<b>\$385,536,037</b>	<b>\$466,486,000</b>	<b>\$806,513,000</b>
1924 .....	\$183,681,538			\$178,261,677		
1923 .....	\$174,647,797			\$194,072,530		
1922 .....	\$157,119,589			\$192,338,574		





A 6-Cylinder Bus of the Parlor Car Type. Luxurious Appointments Reduce the Discomfort of a Long Distance Trip to a Minimum.

## The Motor Bus in 1927

A Mobile Transportation Unit Which Continues Its Steady Climb in Wide Popular Favor

By

A. J. BROSSEAU,

Pres. Mack Trucks, Inc., Vice-Pres.  
Commercial Car Division of the  
National Automobile Cham-  
ber of Commerce

**S**TEADY progress was made in 1927 in adapting the bus to the transportation needs of the country. Buses in operation on January 1, totaled 90,000, as compared with 80,000 a year ago. In the heyday of the trolley, about 100,000 were in use—after some two decades of expansion—as compared with 90,000 buses in operation after about five years of use of the specially designed motor vehicle for this service.

Motor vehicles are providing a type of local transportation service unparalleled in history, and every mile of our 3,000,000-mile highway system is potentially available for motorbus routes, as compared with 250,000 miles of steam railroads. Motorbus transportation is yet in its infancy, and is destined to surpass the most optimistic dreams of its ardent enthusiasts.

Bus use is generally classified in terms of ownership into three groups—independents, street railways and steam railroads. There were many developments during the past year, and appreciable growth in the number of buses in each type of service used.

The independent group remains preponderant in numbers and many of the well established lines have attained a large measure of financial stability. Establishment of better terminals has been one of the important developments of the year; but, while a number of union bus terminals have been built, there still remains a tendency toward private company terminals which doubtless will last as long as the present intense competi-

tion for business exists on many routes.

Numerous consolidations of small companies into large systems were effected. Chief among the important consolidations last year was the formation of the Motor Transit Corporation, a \$10,000,000 holding company, which now controls four inter-city lines operating over 15,000 miles of highway in five States in the Middle West.

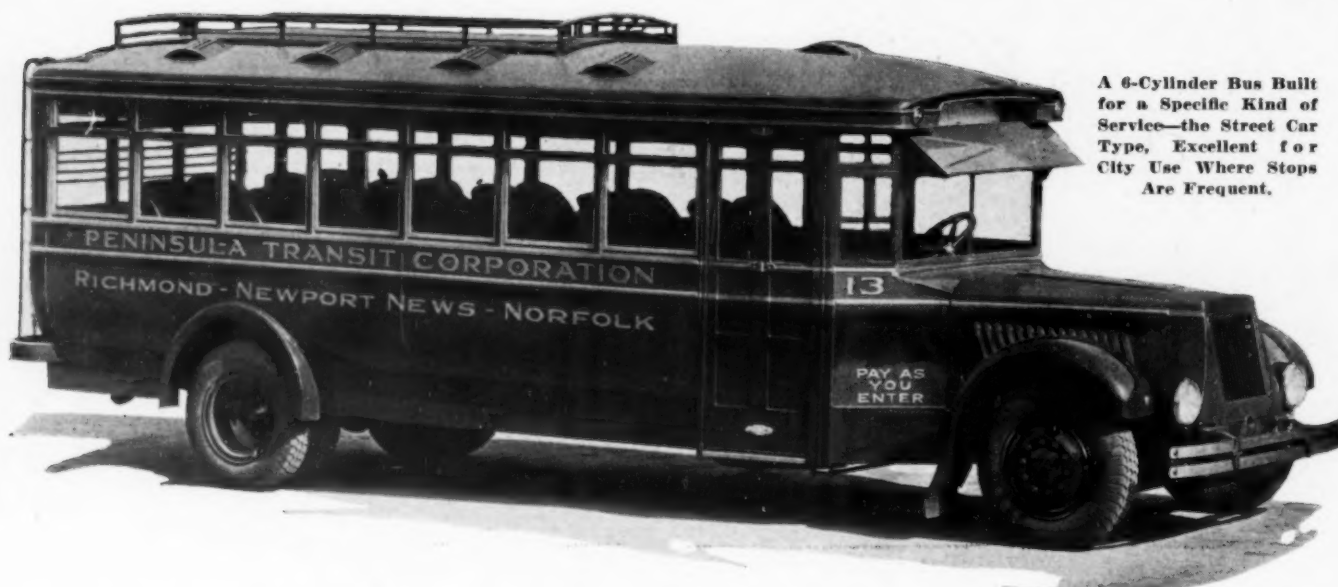
Accompanying the consolidation movement has been the growth in power and influence of the "cowboy" type of operator in the Middle West, Southwest and Pacific Coast. This name has frequently been applied to a group of operators who have been successfully running buses for several years over long distance routes, and who aspire to develop coast-to-coast systems. Lines have been operated from San Francisco and Los Angeles to Chicago for several years and much competition is developing in this field. One phase of long distance operation of unusual importance is the selling of tickets to points all over the country. These long distance routes are operated at rates averaging, perhaps, two-thirds of the rail fare, and the success of the operation is made possible by the long mileage at which the buses are operated and

by the fact that the buses always travel through the mountain and desert part of the country practically fully loaded.

Records show that substantial profits are generally being made by independent bus operators. In the case of public utility commission reports where a great deal of street railway or steam railroad operating statistics are included, the results are not always so encouraging on their surface.

A tendency in the street railway field to minimize the importance of the motorbus, particularly in comparison with the trolley car, has been in evidence. One statement made at the Cleveland convention of the American Electric Railway Association in connection with a committee report was to the effect that, in as much as it did not appear that street railway companies generally were operating buses at a profit, it was probable that the street railway industry was reaching the saturation point in bus use. I do not subscribe to this theory. I believe the editorial in the Electric Railway Journal, September 17, 1927, entitled "Economics of Bus Operation Better Understood," fairly and correctly analyzes the situation. I quote from it and urge you to read the entire editorial.

"Gradually the place of the bus in the general transportation scheme is being more clearly defined. It is still too early for a final definition of its field of usefulness, but great strides have been taken away from the chaotic thinking which prevailed on this subject a few years ago. \* \* \* It is now evident that one of the major fields of usefulness of the bus is in rendering a class of



A 6-Cylinder Bus Built for a Specific Kind of Service—the Street Car Type, Excellent for City Use Where Stops Are Frequent.

service different from that of the electric railway. By furnishing service superior in comfort, convenience and speed to that of the street car the bus meets a real transportation need."

Bus operation by street railways involves the use of more than 8500 buses, as compared with about 7000 on January 1, 1927.

Two factors among many others point to continued and perhaps rapid expansion of use of buses by street railways:

First, economies of bus operation in handling feeder routes and light traffic lines leaves no alternative but the bus to the street railway executive who is anxious to conduct his transportation business at the maximum profit. These economies are most noticeable when equipment, power houses, track or streets become worn out and require extensive repairs or replacement.

Second, the increasing density of street traffic in congested centers demands a mobile transportation unit that will move with, rather than impede, the flow of modern street traffic.

New types of "street car" buses, seating 35 to 45 passengers and providing for as many more standees, have been a development during the past year and may prove to be the solution of the rush hour problem. Further experience with this type of vehicle during the next

year will be looked forward to eagerly.

In commenting on the mass transportation problem I would like to repeat certain statements I made in June before

what point of thinning density, however, the bus begins to give a superior all-around service upon an economical and profitable basis, is a question upon which there is not yet conclusive evi-



A White Bus Equipped With a 6-Cylinder 100 Horsepower Engine, a Double Drop Frame and 4-Wheel Brakes.

the Bus Division of the American Automobile Association as follows:

"The place of rail lines in handling mass transportation in congested centers appears, at the moment, to be secure from an economic point of view. At

dence. We know that the vehicle has been substituted for entire trolley systems in 65 towns and cities, all of them under 100,000 population.

"Whether the bus, in its present state of development, can replace the trolley in cities of larger size must be decided by the experience of the rail operators with buses. This experience, to be worthwhile, must be based on facts—all the facts. 'Experience' to prove that buses are not as efficient or desirable as the trolleys can easily be upheld by anyone who is determined to prove the superiority of the trolley by overlooking some of the facts. On the other hand, the case of the bus must be proved by facts—all the facts. The time has come when both trolley and bus must stand or fall on their respective merits.

"Eventually, all street railway companies come to the point where new equipment has to be purchased, new rails or pavement installed, and power houses renovated. When this happens, they



A 6-Wheel Gas-Electric Drive Highway Unit Built by the Versare Corporation. It Has a Capacity of 35 Seated and 35 Standing Passengers. Two Electric Motors Each Drive a Rear Axle. The Power Plant Is Mounted at the Extreme Rear End of the Body.



Studebaker Buses Operating From a Terminal at  
Grafton, W. Va.



must decide whether it is advisable to substitute buses for rail operations."

About 60 railroads are using buses either directly or through subsidiaries, among the leading rail bus operators being:

	Buses
N. Y., N. H. and Hartford.....	190
Great Northern.....	165
New York Central.....	81
Boston and Maine.....	68
Union Pacific.....	39
Spokane, Portland & Seattle.....	36
Atchison, Topeka and Santa Fe.....	30
Denver and Rio Grande Western.....	30
Baltimore and Ohio.....	26

Among the Southern railroads which are operating buses are the following:

	Buses
Alabama, Tennessee and Northern.....	2
Atlanta, Birmingham and Atlantic.....	1
Cadiz.....	2
Chattahoochee Valley.....	1
Norfolk Southern.....	3
Seaboard Air Line.....	6
Southern.....	2
Tennessee and North Carolina.....	1
Tennessee, Kentucky and Northern.....	2
Tuckasegee and Southeastern.....	1
Chesapeake and Ohio.....	4

The most graphic statement of relative rail truck and bus costs that has ever been made was that of President George Hannauer of the Boston and Maine Railroad, who disclosed a ratio of 5-2½-1 in operating costs between steam, rail, motor car and bus. He added:

"Expenditures are \$1.589 to operate a steam passenger train one mile without any charge for roadway or rail maintenance; \$0.72 a mile for gasoline rail cars, and \$0.289 for a mile by bus. Besides carrying 737,767,296 passengers on its rails last year, the Boston and Maine now has 68 buses operating 40,000 miles daily over some 1000 route-miles and 24 gasoline rail cars operating a total of 2700 miles a day. The accompanying table shows cost per mile of operation broken down and charged to the various accounts of steam, gasoline rail cars and bus operation."

#### Transportation Costs Per Mile

	Steam	Rail	Motor Car	Bus
Wages.....	\$ .387	\$ .2340	\$ .04574	
Fuel.....	.237	.1077	.03343	
Repairs.....	.508	.0833	.05359	
Miscellaneous.....	.166	.0117	.07171	
Depreciation, Insurance and Interest.....	.165	.1588	.07243	
Taxes and fees.....	.126	.1260	.01265	
Total.....	\$1.589	\$ .7215	\$ .28955	

Engineering developments during 1927 consisted largely of refinements of fea-

tures already in use. As a result, operators are getting longer life from their vehicles, as measured in miles, which has cut down depreciation and expense.

Analysis of 84 bus models in production in 1927 shows that the 6-cylinder type comprises 82 per cent of all models. About 90 per cent of all models are equipped with pneumatic tires.

A feature of the past year is the wider use of the super-observation type body, originated on the Pacific Coast several years ago, which elevates by several feet about half of the passenger load. A novel development is the street car body, in which the space formerly devoted to the engine is used to accommodate passengers, with the engine underneath. This type permits seating of 35 to 45 passengers and also facilitates loading and unloading.

The problem of regulation of motor-buses is still troublesome and unsolved. Four States, Arkansas, Missouri, Nebraska and Texas, passed bus regulatory laws in 1927, and some form of regulation applies to the bus business in 44 States. Studies are being made by various groups in an effort to provide suitable and fair legislation.

There are certain principles in relation to both Federal and State regulation to which I believe the motorbus industry subscribes. These I pointed out recently at a meeting of the Bus Division of the American Automobile Association, in part, as follows:

"One of the chief virtues of the bus

is its mobility. It does not run on rails, but it can go wherever there is an improved road. It is not costly to stop, hence it can pick up passengers at any point. Rates per mile should not be uniform unless road and other conditions are comparable. Regulation should not be based on rail or bus practice of today. Elaborate systems, such as apply to rail lines, are not needed. Disregard all or part of these factors and you will retard bus development and so hamper it as to deny the public the benefit of its use.

"I emphasize these points because in the initial stages of bus regulation precisely these things were attempted. Legislators, in many cases, did not take into consideration the fact that the bus performs an entirely different service from that of the rail line and should be regulated as a bus—not as a rail vehicle. Bus regulation of the railroad type not only is restricted, but also is contrary to the public interest. There are those who believe this sort of punitive regulation was, in the past, prompted by hostile rail interests. Regardless of where the responsibility lies, I am sure rail lines now operating buses will not approve of it.

"Bus development can only come as we have regulation based upon the following principles: Varying standards of rates; liberal policies with respect to development of new lines; sympathetic co-operation on the part of regulating bodies with respect to flexible schedules, so adjusted as to give necessary service with a minimum of waste; protection of existing lines of one type against interlopers of the same type, so long as public service requirements are met.

"In short, there should be regulation which considers first the needs and desires of the public and, second, the interests of the carriers."



A Modern Street Car Type Motor Coach to Seat 40 Passengers and Which Has Comfortable Standee Capacity of at Least 40 More, and a Possible Over-load Capacity of 100 Passengers, Seated and Standing.

# Trends in Motor Trucks

Increased Speed and Lighter Vehicles Demanded—  
Selling Methods Lean Toward Conservatism

By

EDWARD F. LOOMIS,

Secretary, National Motor Truck Com-  
mittee of the National Automobile  
Chamber of Commerce.

**R**APID expansion in the use of trucks continued during 1927. For the third successive year, truck production exceeded 450,000, with an estimated output of 460,000 in 1927. This production record means similar progress in the operating field. From the manufacturing end, two particular trends in 1927 are noted. First, the demand for high-speed, pneumatic tired vehicles. Second, increasing conservatism in selling methods. Both had a pronounced effect upon sales.

The demand for increased speed reflects the intensity of modern business competition and the result of traffic conditions. There is an increasing disposition by State motor vehicle commissioners to insist that trucks must keep up with, and not retard, other traffic. Annoyance to drivers in shifting gears on hills and increased cost of maintenance due to gear shifting are other factors. More and more heavy trucks are being equipped with pneumatics in an effort to check the trend toward lighter vehicles so equipped.

Conservatism in selling methods followed a period of "production" selling under the theory that the lower overhead made possible by quantity production was sufficient to warrant a considerable volume of risky sales. Whatever the merits of this theory may be, there remains no doubt in the truck industry that the pendulum toward it swung much too far. Conservatism of the past year in selling has been expressed largely in the granting of credit. Not much business has been sought at terms of less than 25 per cent down and the balance in 12 months, and little has been accepted. Further reforms are in sight in the matter of allowances for used trucks taken in trade.

Theoretically, selling methods are of little interest to the operating industry, but actually they are of prime importance in that part of the industry devoted to professional hauling. Eagerness of manufacturers to obtain sales volume in 1925 and 1926 led to the placing of more equipment in this field than there was demand for, which in turn led to the acceptance of business by haulers at rates too low to yield a profit and to pay for equipment. Decrease in demand for heavy duty trucks in 1927 was due to a considerable extent to this tightening of credit and absorption of trucks previously sold for which

there was little or no economic need. Such trucks should be fully absorbed by now, making the 1928 market more promising.

Important as the professional hauling field is, it is only a small portion of the truck operating industry. Statistics prepared by the National Automobile Chamber of Commerce indicate that 82 per cent of all trucks are owned by shippers, and used as adjuncts of the main business of the shipper; 11 per cent are owned for use under private contracts with shippers; and 7 per cent are owned by professional haulers. This last group of 7 per cent comprises a small number who operate regularly between fixed points, at fixed rates and on fixed schedules as common carriers, and a larger number who are in the general trucking business.

Further studies made public during the past year indicate that the 2,700,000 trucks in service on January 1, 1927, were owned by more than 2,000,000 individuals and corporations, revealing clearly for the first time how widely scattered truck ownership is. Statistics for fleet operation show slightly less than 1,000,000

trucks owned by 270,000 individuals and corporations, averaging less than four trucks to a fleet.

The ten leading uses of motor trucks, with the number of trucks used in each field, as indicated from a study of 1,300,000 trucks, are as follows:

R. F. D. Owners.....	248,296
Groceries, Food Products.....	147,810
General Contractors .....	83,853
Auto Accessories .....	78,262
General Trucking .....	70,735
Oils and Gasoline.....	55,428
Lumber and Logging.....	50,976
General Merchandise .....	49,465
Meats and Packing.....	40,074
Bakeries .....	40,058

Other recent studies of truck operation are interesting as typifying what is being done with the truck by its 2,000,000 owners. The major part of the tonnage transported by motor truck moves less than 30 miles, according to surveys by the U. S. Bureau of Public Roads.

The main function of the motor truck is direct distribution. In Cook County, Illinois, it was found that 70 per cent of the truck tonnage was a direct distribution of commodities to the consumer. These goods were divided as follows: Consumption goods, 43.5 per cent; materials for construction and repair, 20.8 per cent; goods to farms, 5.5 per cent.

Most leading cities now receive the bulk of their milk supply by trucks.



Motor Trucks and Power Shovels Cut Road Building Costs.



## Motor Trucks Serving Every Type of Industry



Ninety-two per cent of the hogs received at the Indianapolis stockyards from within a 50 mile zone were shipped by truck, compared with 42 per cent in 1926, and the percentage of truck shipments is steadily increasing.

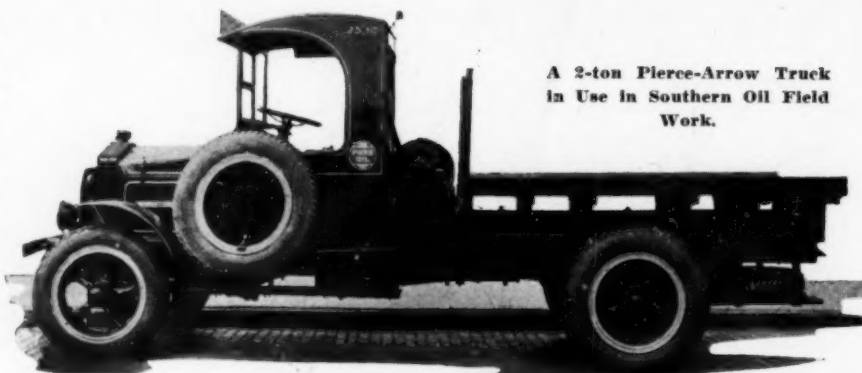
Small trucks constitute by far the greater proportion of trucks in service.

There were no unusual developments in 1927 in respect to regulating truck hauling. The investigation into the relation of truck and bus operation to the business of the railroads, begun in 1926 by the Interstate Commerce Commission, has not yet been concluded. On January 16, oral argument on the preliminary findings of its examiner will be presented. Little sentiment from the public, and much less than expected from the railroads, has developed during this investigation in reference to regulating the truck business.

Perhaps one important reason for comparative apathy on the part of the railroads was correctly interpreted by the Wall Street Journal in a recent editorial, in part, as follows:

"For the first eight months of 1927 the average daily railroad freight car movement was 30.9 miles per car. In the days of government ownership and administration the daily movement was about 24 miles. This gain has been largely due to efficiency and much of it has been made in the past three years, with a corresponding increase in the average number of tons hauled per car. Surprisingly enough the influence of motor truck competition has really helped.

"This is because the motor truck is a competitor only in the short haul. Up to



A 2-ton Pierce-Arrow Truck  
in Use in Southern Oil Field  
Work.

thirty miles or so the truck has largely replaced the railroad. But this has left the rolling stock free for the more profitable long haul traffic. \* \* \*

"There is a broader lesson in this experience. It is not difficult to see that when a facility finds its true use, by experience, its co-operation with other facilities is much more important than its competition. There is nothing to prevent the railroads from using motor trucks in replacement of track which has become obsolete, and it is not too much to say that more than 10 per cent of the railroad mileage of the United States might be scrapped with advantage to the railroads and no loss to anyone but the local bodies which hate to let such a taxpayer get away from them."

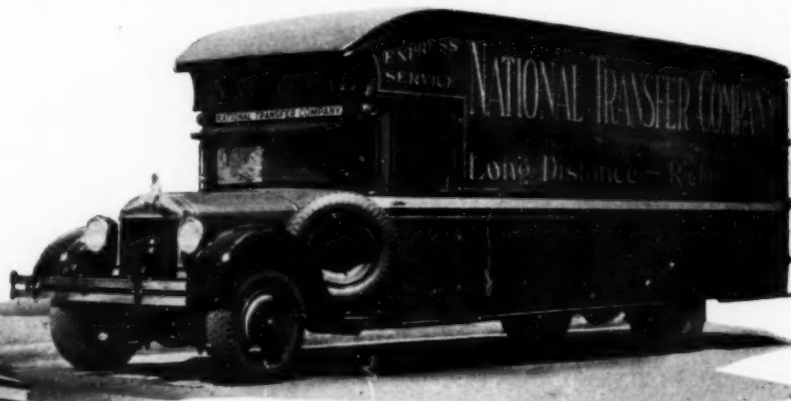
Another reason for a complaisant attitude toward the truck by railroads is their growing use of trucks.

Continued growth of the truck industry is well illustrated by production figures for the last ten years:

#### MOTOR TRUCK PRODUCTION

Year	Production
1918	227,250
1919	275,943
1920	321,789
1921	*146,082
1922	*249,228
1923	*385,755
1924	*363,530
1925	*473,154
1926	*491,353
1927	*460,000

\*Includes Canadian production.



Above—Moving Concerns Extensively Use the  
Bus Chassis as a Hauling Medium. Here Is a  
4-Cylinder Truck of This Type.



Left—A 6-Cylinder Bus Type Commercial Unit.  
The Pneumatic Tires All Around and the Double  
Tires on Each Rear Wheel, Make for Easy Riding  
and Facilitate Speed With Comfort and Safety.

## Railroads Using Trucks in Increasing Numbers

A definite trend noted during the past year is the increasing use of motor trucks by railroads. At one time regarded as a competitor, the motor truck is now largely viewed by the railroads for what it really is; namely, a co-ordinating ally

particularly adaptable for railroad use in short haul, less-than-carload work.

A recent tabulation prepared by the National Automobile Chamber of Commerce lists 51 railroads in the United States and Canada which employ motor trucks to supplement their rail service, either for terminal movement, door-to-door service, bringing freight to and distributing it from concentration points or

in replacement of local freight trains.

Truck manufacturers predict that the number of trucks in railroad service will constantly increase. Delivery of less than carload lots has always been a nightmare to rail officials, it is pointed out, and each succeeding day finds motor trucks proving that in this type of work they are profitable and efficient units in rail transportation.



# \$4,000,000,000 Value of Output of Motor Vehicles and Allied Products Last Year

## 3,530,000 Vehicles Produced in 1927—23,125,000 Motor Vehicles in United States, 80 Per Cent of World's Total

**A** TOTAL production of 3,530,000 motor vehicles, with a wholesale value of \$2,556,750,000 in 1927, is indicated by figures compiled by Alfred Reeves, general manager of the National Automobile Chamber of Commerce. In 1926 production totaled 4,480,000 vehicles and the wholesale value was \$3,056,950,000, and in the preceding year 4,336,754 vehicles were produced with a total wholesale value of \$2,977,904,000.

The decreased output in 1927 is attributed to the shutdown of the Ford plant pending the introduction of the new model.

One of the most significant figures for the year is the total of 543,000 motor vehicles exported, representing 15 per cent of the output of this country's automobile plants. The United States now has 80 per cent of the world's automobiles, the total registration of motor cars and trucks in this country being 23,125,000. Reports from the various States show a total of 20,140,000 passenger vehicles and 2,985,000 trucks registered. The world registration of motor vehicles is given as 28,900,000.

Closed cars made last year numbered 2,452,800, or 80 per cent of the total passenger cars produced. In 1926 closed cars produced comprised 74 per cent of the total output of passenger cars, compared with 56 per cent for the preceding year.

An outstanding feature in connection with the production of motorbuses and trucks is the increasing use to which they are being put by steam and electric railways. Last year 370 street railways were operating 8500 buses, compared with 344 street railways using 7000 buses in the preceding year. Buses used by 60 steam railroads in 1927 totaled 1200, compared with 510 used by 41 steam railroads in 1926. The number of railroads using gasoline rail motor coaches on short lines last year numbered 200, an increase of 10 over the pre-

ceding year. Railroads using motor trucks as part of their shipping service numbered 60 at the end of last year. Motorbuses in use total 90,000, compared

with 80,000 in use at the end of 1926. In addition to the actual construction of motor cars and trucks, there were manufactured 66,000,000 tires, with a

total wholesale value of \$595,000,000, and parts and accessories, exclusive of tires, amounted to more than \$750,000,000, which, together with the wholesale value of trucks and cars produced, gives a grand total of close to \$4,000,000,000, and this is only the wholesale value of the main products of the motor vehicle industry of the country for one year.

The number of persons employed in the automobile industry and allied lines totals about 3,675,000.

About 3,125,000 carloads of automotive freight were handled by the railroads of the country in 1927. The automobile industry uses 84 per cent of all the rubber imported. It also consumes 50 per cent of the plate glass produced, 12 per cent of the copper and 14 per cent of the iron and steel produced in this country. Cotton fabric used in making tires in 1927 amounted to 219,000,000 pounds. In addition large quantities of cotton and cotton products are used in the construction and finishing of motor vehicles. In 1927 motor vehicles consumed 9,697,000,000 gallons of gasoline and 390,000,000 gallons of lubricating oil, and figures compiled from traffic surveys in various sections of the country show that the average annual mileage covered by motor vehicles is steadily increasing with a corresponding increase in consumption of gasoline, oil, etc.

The motor vehicles retail business in the country comprises 52,592 car and truck dealers, 52,086 public garages, 85,983 service stations and repair shops and 67,753 supply stores.

About 58 per cent of the new cars and 55 per cent of the trucks were sold on time.

Motor vehicle taxes last year amounted to over \$725,000,000.

### Preliminary Facts of the Automobile Industry for 1927

#### PRODUCTION

Cars and trucks.....	3,530,000
Cars.....	3,066,000
Trucks.....	464,000
Production of closed cars.....	2,452,800
Per cent closed cars.....	80%
Wholesale value of cars.....	\$2,190,000,000
Wholesale value of trucks.....	\$366,750,000
Wholesale value of cars and trucks.....	\$2,556,750,000
Tire production.....	66,000,000
Wholesale value of tires.....	\$595,000,000
Wholesale value of parts and accessories.....	\$750,000,000
Average retail price of cars.....	\$953
Average retail price of trucks.....	\$1053
Persons employed in motor vehicle and allied lines.....	3,675,000
Motor vehicle taxes.....	\$725,555,812

#### REGISTRATION

Motor vehicles registered in U. S.....	23,125,000
Motor cars (State reports).....	20,140,000
Motor trucks (State reports).....	2,985,000
World registration of motor vehicles.....	28,900,000
U. S. per cent of world's registration.....	80%
Motor vehicles registration on farms.....	4,700,000
Miles of surfaced highways.....	575,000
Miles of highways in U. S.....	3,006,081

#### RETAIL FINANCING

Per cent new cars sold on time.....	58%
Per cent new trucks sold on time.....	55%
Average note, purchase of new cars.....	\$574
Average note, purchase of used cars.....	\$286
Average note, purchase of new trucks.....	\$840

#### AUTOMOBILE'S RELATION TO INDUSTRY

Carloads of automotive freight shipped over railroads.....	3,125,000
Rubber used.....	84%
Plate glass used.....	50%
Copper used.....	12%
Iron and steel used.....	14%
Gasoline consumed (gals.).....	9,697,000,000
Motor oil consumed (gals.).....	390,000,000
Crude rubber used in tires (lbs.).....	630,000,000
Cotton fabrics used in tires (lbs.).....	219,000,000

#### MOTOR BUSES AND MOTOR TRUCKS

Buses in use.....	90,000
Motor buses produced.....	12,000
Consolidated schools using buses.....	14,000
Street railways using motor buses.....	370
Buses used by street railways.....	8,500
Steam railroads using motor buses.....	60
Buses used by steam railroads.....	1,200
Railroads using gasoline rail motor coaches on short lines.....	200
Railroads using motor trucks as part of shipping service.....	60

#### EXPORTS

Number of motor vehicles exported (U. S. and Canada).....	543,000
Value of motor vehicles and parts exported.....	\$507,500,000
(Including engines and tires) U. S. and Canada.....	
Increase in exports over 1926.....	12%
Motor vehicles imported.....	600
Motor vehicles exported.....	15%

#### MOTOR VEHICLE RETAIL BUSINESS IN U. S.

Total car and truck dealers.....	52,592
Public garages.....	52,086
Service stations and repair shops.....	85,983
Supply stores.....	67,753

# American Motor Vehicle Manufacturers See Big Future Demand in Foreign Fields

## Automotive Industry Cooperating in World-wide Movement for Highway Development—Foreign Countries Are Awakening to Advantages of Motor Transportation

By

PYKE JOHNSON,

National Automobile Chamber  
of Commerce,  
Washington, D. C.

FIFTEEN years ago the motor vehicle manufacturers of the United States were producing about 500,000 cars annually, and prophets of woe were shaking dubious heads over the future of an industry which leading economists freely said had reached the limit of the Nation's absorption powers. Today, the average American grumbles if he has to let his wife have the family car and there is a surprising growth in the number of "two-car families."

More remarkable, perhaps, is the development which is taking place in the export field. Complete figures covering the world use of cars do not go back very far, but there is enough evidence to bring out some surprising facts:

The motor car exports of last year equalled the total production of the United States in 1913, and constituted about 15 per cent of the production in 1927, amounting to 543,000 motor vehicles, according to the latest available figures. The total value of motor vehicles and parts exported in 1927 was \$507,500,000, an increase of 12 per cent over 1926 exports.

There are now four times as many motor vehicles in use outside of the United States as there were in this country in 1913.

It required 15 years—from 1900 to 1915—to add as many cars in the United States as were added outside of the United States during the last four years.

The desire to travel, to see new things, to meet new people, the need for quickened means of communication, is universal and because it is and because, too, the American car is the world standard of motor value, the export vehicle business has almost overnight become a major factor in the prosperity of our own country. As the export business now amounts to virtually one-twelfth of the total, it really absorbs one full month each year of the output of 4,000,000 workers in the motor vehicle industry.

Reviewing the growth in four years, it is not difficult to forecast an even more striking advance in the next five years, with a corresponding favorable influence upon all lines of productive em-

ployment in the United States. The pioneering period of trial and test is at an end.

In any analysis of what stands in the way of continued world motor development, the immediate and most compelling answer is "roads." Foreign roads of 2000 years ago exist chiefly today as memorials. They are narrow, unbelievably rough and totally unfitted for the demands of modern traffic. Even the roads of 150 years ago, superbly built as they were, have suffered from lack of maintenance and must go through a great re-surfacing program to bring them up to date.

The man who wants to travel in South America gets his enjoyment from touring the city streets and after that for the most part he trusts to his car to make the grade without roads. Yet, automotive exports to Latin America last five years, the increase is amazing—10 times the total for 1910. Even in the last five years, the increase is amazing, since in that period Mexico, Central and South America stepped up from \$17,000,000 in 1922 to an amount five times as large last year. The Argentine alone today buys more automotive products from us than did all the countries of Latin America in 1923, and yet the Argentine traveler ships his car by freight when he goes from one city to another.

So, even without roads, the idea of motor transportation has caught the popular imagination and the one outstanding problem is how to increase facilities for car use. Of course, there are other questions to be dealt with, but the biggest question of all is that of roads.

Recognizing this fact, the executives of the automotive industry are co-operating in a world-wide movement for highway development which has been

launched, in so far as the participation of this country is concerned, by the Highway Education Board. On this Board, which is headed up by Chief T. H. MacDonald of the Federal bureau of public roads, appear the names of Assistant Secretary of State Wilbur J. Carr, former Assistant Secretary of Commerce J. Walter Drake, Dr. Leo S. Rowe, director of the Pan American Union; Fred I. Kent, international banking authority; Roy D. Chapin, president, and H. H. Rice, director, of the National Automobile Chamber of Commerce; H. S. Firestone and W. O. Rutherford of the rubber industry. Linked with this Board is the executive committee of the Pan American Confederation for Highway Education, headed by Dr. Rowe and dealing specifically with the problems in Latin America.

Among the things which these organizations have accomplished have been the bringing to this country of a selected group of Latin-American engineers for a survey of motor transportation in all of its aspects; similar tours for Latin journalists and business men, and a working program which has already resulted in the organization of national highway federations in 12 of the countries of the Pan American Union. With the local board as a clearing house, information respecting latest developments in highway development is constantly being interchanged, together with films, research findings and other relevant material.

Coincidentally, the United States Government has sent one official delegation to Latin America to participate in the first Congress of Highways, at Buenos Aires, and bills are now before Congress which will authorize a second delegation to attend the forthcoming conference at Rio de Janeiro in 1928. Our Government also has joined the International Road Congress and a delegation, headed by Mr. MacDonald, participated in this congress at Milan in 1926, later making a tour of observation through 12 European countries. Presi-



## Increasing Use of Modern Highway Building Machinery in Latin America.



Constructing a Macadam Road in Panama With a Stone Spreader, 3 1/2-ton Trucks and a 12-ton Gasoline Roller.



Building a Wide Modern Highway in Salvador With the Aid of Heavy Duty American Made Road Rollers.

dent Coolidge has recommended that this body be invited to hold its next session in the United States, probably in 1930, and also has asked Congress

to all countries to discuss highways as well as related problems. The response to these activities is world-wide and estimates indicate that the world high-

highway and bridge improvement work. As these programs get under way, their effect upon other export movements is expected to be far-reaching in

## Manual Labor Still Extensively Used in Constructing Roads in Countries to the South of Us.



Building La Guayra and Caracas Highway in Venezuela.



Repairing Carretera Central del Norte Road in Colombia.

for authority to delegate Government engineers to go to Latin countries wherever they are requested, just as we now send military and naval advisers to them.

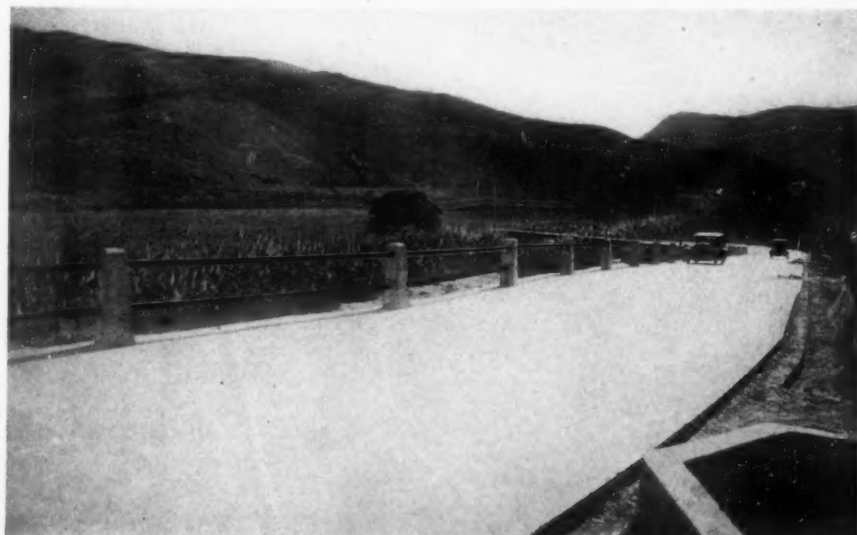
President Coolidge in his last message to Congress, referring to this plan, said:

"While the advantage of having good roads is very large, the desire for improved highways is not limited to our own country. It should, and does, include all the Western Hemisphere. The principal points in Canada are already accessible. We ought to lend our encouragement in any way we can for more good roads to all the principal points in the hemisphere south of the Rio Grande."

Beyond these things, the motor industry is an active participant in world motor congresses, at which highways is always a leading subject; delegations attend such world events as the International Chamber of Commerce sessions from the industry, and representatives are constantly being sent by the National Automobile Chamber of Commerce

way program today amounts to about \$1,000,000,000, exclusive of the United States, and day by day fresh evidence comes from all over the globe of new

character, since the motor vehicle, once shipped abroad, is not stored away, but at once becomes an agency in transportation and production.



First Class Highway Between Antimano and La Majada, Venezuela, Protected by Concrete and Steel Guard Rail—Note Concrete Drainage Structure in Right Foreground.

# ASPHALT Pavements

By J. E. PENNYBACKER,

General Manager,  
The Asphalt Association,  
New York City.

**S**UBSTANTIAL progress has been made in the Southern States in the building of modern asphalt pavements and in the improvement of secondary roads by means of asphaltic treatment. On the Federal aid highway system in 13 Southern States the asphaltic type of pavement exceeded in mileage on June 30, 1927, all other types of pavement higher than waterbound macadam combined, as reported by the chief of the United States Bureau of Public Roads in his annual report. The total of the asphaltic types on the Federal aid system aggregated 2969.3 miles, while that of Portland cement concrete, brick and block aggregated 2695.6 miles. Nine out of 13 Southern States included in the Federal report showed a preponderance of asphaltic types, while four showed a preponderance of Portland cement concrete over the other types.

An interesting feature of the asphalt paving work in Southern States is the utilization of a variety of types judged to be best suited by the respective State highway departments to their local conditions. In North Carolina, for example, 249.4 miles of asphaltic concrete have been completed on the Federal aid system, as compared with 37.9 miles of penetration macadam. A considerable mileage of asphaltic types has also been constructed on the State system other than Federal aid. This State also has developed an extensive mileage of sand asphalt roads in the eastern portion, where stone is not available, and thus utilized at moderate cost the sand local-

ly available. This type of pavement now approximates 500 miles, with some 104,000 square yards let to contract which will be carried into next year for completion. On the county highways there has been also a large yardage laid in which asphalt is the predominating type. Approximately \$15,000,000 will be available for new construction in 1928 on the State highway system, of which about half will be expended in the construction of hard-surfaced roads of asphalt and Portland cement concrete.

North Carolina has gone very extensively into the surface treatment of secondary roads and is giving particular attention to the development of low cost surfaces for highways which do not warrant the outlay incident to the improvement of main roads. Extensive development may be looked for along these lines.

Georgia has made considerable progress along the lines of development of flexible bases of macadam and gravel for asphalt tops, and has had striking success with this combination. The asphalt work on the State highway system

of Georgia has been the subject of very high praise by engineers who have inspected the Georgia highways. A contract recently awarded calls for the resurfacing of a section of Central Dixie Highway near Waycross with black base and sheet asphalt surface. Both Georgia and South Carolina have adopted asphaltic concrete base (black base) and asphalt wearing courses for a considerable portion of the famous Coastal Highway, which will carry the great North and South winter traffic, in addition to the normal traffic requirements. The black base sections of the Coastal Highway comprise 6.7 miles in Charleston county, S. C., and from Savannah, Ga., south 11 miles, as well as a 13-mile section between Darien and Brunswick, in Georgia. Savannah has had conspicuous success with asphalt concrete base pavements (black base), and since 1925 has laid all of its asphalt pavement on black base. According to the statement of heads of the Georgia highway department, from 60 to 70 per cent of the paving program for 1928 will comprise asphaltic types of construction.

South Carolina has turned very heavily toward asphalt in its 1927 paving program and has specialized in the hot mix types, such as sheet asphalt and asphaltic concrete, utilizing both Portland cement concrete and asphaltic concrete bases. The asphaltic pavements constructed in 1927 aggregated approximately 50 miles, a substantial increase over 1926, and it is predicted that the asphalt paving will exceed in 1928 the



A Georgia Asphalt Road Comprising a 3½-inch Concrete Base and a 2-inch Asphalt Surface.



construction during the past year. In addition to this mileage of high-type paving, 120 miles of roadway were surface treated with bituminous materials.

Florida is paving very extensively with asphalt and it is now possible to reach any portion of the State over a well paved highway, with asphalt largely predominating. The State road department has this year completed 307,824 square yards of asphalt surface. In addition, 2,675,280 square yards of lime-rock base and 1,637,760 square yards of sand-clay were surface treated with asphalt. The State work has been heavily supplemented by county bond issue programs.

A striking feature of Florida paving policy has been the utilization of lime-rock bases for asphalt wearing courses. This material provides excellent bases for the asphalt tops and is frequently allowed to take traffic for a year or two before being resurfaced. In addition to their value as bases, they utilize a material locally available to an extent which is very advantageous to the people of the State. The city of Miami has recently completed over 500,000 square yards of

limerock pavements with sheet asphalt surface.

Virginia has confined its State road program largely to asphalt macadam and Portland cement concrete. It appears that the State will continue its established policy during 1928. The length of asphalt pavements, principally penetration macadam, approximates 600 miles. An outstanding example of successful black base construction is the Seven Pines Highway, from Richmond to Seven Pines, a distance of approximately 5.2 miles and carrying enormous traffic, although the total thickness of the pavement is only  $5\frac{1}{2}$  inches, including the base and top. This particular highway is one of the finest in the South. Surface treatment with asphaltic materials has been receiving particular attention and very successful results have been obtained. It is probable that this phase of the work will be greatly extended.

West Virginia has specialized in the building of asphalt macadam highways and now has a total of about 900 miles. The State also has devoted considerable attention to the surface treatment of

gravel and macadam roads, particularly in the eastern portion.

Tennessee has constructed 339 miles of the bituminous macadam type during 1927.

Asphalt pavements constructed during 1927 on highways in other Southern States were approximately as follows: Louisiana, 700,000 square yards; Mississippi, 600,000; Arkansas, 800,000; Oklahoma, 1,500,000; Texas, 5,000,000.

Caddo Parish in Louisiana has attracted a great deal of attention by utilization of its gravel roads as bases for asphalt pavements and also the conservation of its gravel roads by surface treatment. The asphalt experimental road constructed by the State highway department in 1926 has shown in 1927 some very interesting results, one of which is the complete success of the asphalt concrete sections using both fine and coarse oyster shell as aggregates. This occasioned much surprise and gratification to the engineers in charge, as it has an important bearing in road construction along the Gulf Coast, where considerable quantities of shell are available.



Constal Highway, Ga., Built in 1926 With a  $3\frac{1}{2}$ -inch Concrete Base and a 2-inch Asphalt Surface.

## Power Equipment's Use in Road Building Growing

**T**HERE is a machine suited to almost every operation in highway work and it is the development of this machine power, which is characteristic of American industrial development that has greatly speeded up the progress in road construction in recent years. From 30,-

000 to 40,000 miles of surfaced road are being built annually and a large portion of the 3,000,000 miles of rural road are being maintained by a force of men which in proportion to the size of the job is relatively small. If it were attempted by the hand-labor methods by which the Roman roads were built, using prisoners of war and armies in times of peace or the methods of early American road construction, such as the breaking of stone by hand, there is no doubt that

sufficient labor could not be secured.

Thomas H. MacDonald, Chief of the U. S. Bureau of Public Roads, in speaking of achievement in road building in the United States and of our experience from which other nations may profit, said: "It is the engineering achievement of organization and mass production. Availability is made possible by the combination of cheap transportation, mechanical power and equipment and great engineering vision of consumption."

# BRICK Pavements

By M. B. GREENOUGH,

Vice-President,  
Southern Clay Manufacturing Co.,  
Chattanooga, Tenn.

CONSPICUOUS gains were made in marketing vitrified paving brick in the South in 1927—a year in which, generally speaking, the supply of paving and the facilities for furnishing paving of all kinds exceeded the demand. Consequently, competition was exceedingly sharp and price levels the lowest since 1914; in fact, it is not to be doubted that price levels were generally lower than those of 1914. Notwithstanding the over-supplied paving market, with its curtailed construction awards compared with the facilities available for pavement construction, practically as many paving brick were laid in the South in 1927 as were furnished during 1925 and 1926.

While Florida was at the height of its construction activity, great demands were made upon the resources of the South to furnish the necessary materials, labor and contracting resources for public improvements. Lumber came to Florida from the west coast, paving brick came from points as far north and west as Ohio and Kansas, cement and other materials from like or even greater distances. As for contractors and labor, the sources were as widely distributed as the borders of the United States. The slackening of construction activity in Florida during 1926 naturally released the major portion of these improvement resources and forced them to find outlets elsewhere, and principally in other sections of the South.

In 1924, the capacity of Southern paving brick manufacturing plants was approximately 50,000,000 brick per year. The close of 1927 found the output nearer 80,000,000, not through the addition of new plants, but largely through extensions to existing plants. Any reference, therefore, to the state of the market for vitrified paving brick must be judged in terms of a greatly increased capacity

as compared with two and three years ago.

Not only is the demand for paving of all kinds in Florida now comparatively low, due to the surplus of construction during 1925 and 1926, excepting, possibly, where State and Federal aid funds are concerned, but also because of a recent court decision in the case of the Atlantic Coast Line Railroad vs. City of Lakeland, which calls in question, temporarily at least, the method of financing municipal paving improvements on the assessment plan, as enacted by the legislature of 1924. Some localities in Florida apparently over-built during the "boom," and other localities, which normally would be paving now to a considerable extent, are holding back during the uncertainty which surrounds the assessment law. Florida paving is, therefore, low as compared with several years past, and paving brick, always greatly used in Florida and still moving to Florida from Southern plants, except in lesser amounts for the time being, has had to depend upon markets elsewhere in the South for more active consumption. Notwithstanding this condition, which has likewise confronted all other materials, paving brick has succeeded in maintaining an active market in generally falling conditions.

The ability of paving brick to accomplish this has been due to a combination of reasons which may be generally classified under three headings as follows:

First—The extension of capacity, which was the direct outgrowth of the Florida demand, a State traditionally a large user of paving brick, came to plants already in existence, possessing materials naturally favorable to paving brick production. The increased output, therefore, tended to reduce costs, rather than to maintain them on a parity with, or increase over, former costs, as might have been the case had new sources of raw materials been involved. A limited number of such sources were experimented with, but without conspicuous success and with no lasting effect. Savings in production costs through more efficient operation and increased output have been effected at a faster rate than the fall of the market generally, and faster than the reflex of the falling market on competing materials. Hence, brick pavements have been offered to the public at closer margins, compared with the prices of cheaper types of pavement, than ever before. For many years, it has been axiomatic that the public would select the brick pavement for thoroughfares of any consequence freely when the margin of cost above cheaper pavements is less than 60 cents to 75 cents per square yard, for that amount is clearly seen to be recoverable during the life of the brick pavement in savings in maintenance and repair costs. The fact that brick pavements have been offered at much closer margins than those just mentioned, during 1927, accounts in part for the strong gains made by brick in the past year.

Second—The continued use of asphalt filler, which began in the South during the war and which has been almost exclusively used for more than five years, except in Florida, where local reasons sometimes dictate the use of sand filler, has assisted in developing smoothness, maintaining a waterproof surface, and preventing the objectionable cracking that characterized cement-grout filled brick pavements, as well as other rigid types of pavement.

Third—The increase in the use of the 2½-inch brick wearing surface. The South was one of the first sections of the country to use this depth of brick on a large scale. Production of the 2½-inch brick began five years ago, and in some special cases earlier than that. It had gained a strong foothold before it



A Through Highway in Orange County, Fla., Paved With Brick in 1915.





Gulfport Road, South of Hattiesburg, Miss., Paved With Brick in 1926.

was subjected to intensive study of the United States bureau of public roads. The favorable findings of the bureau, however, based upon the Arlington tests and the field study, gave great impetus to its use and confirmed its use on a

larger scale in localities where it had already been laid.

This combination of factors forms in the public mind a new picture of an improved brick pavement possessing, unimpaired, the recognized durability of

brick, reinforced by new attributes which better adapt it for present and future traffic requirements. And, while it is made available at a lesser cost than formerly, it is furnishing greater values on the new basis.

## Record Sales of \$182,000,000 Southern Road Bonds Last Year—50 Per Cent Gain Over 1926

**B**OND sales for the financing of road, paving and bridge work in the South for 1927 show a marked increase over 1926 for the 16 Southern States in the aggregate, and for 11 of them individually, the other five having taken up the slack of previous years and established themselves on a soundly progressive basis. For 1927 the total issue of such securities by the South ran to \$182,337,000, as compared with \$118,552,100, in 1926, an increase of over 50 per cent, and an increase of virtually 19 per cent over the total of \$153,438,000 for 1925, which had been the banner year of record. Also, in number, the year 1927 established a new record, the 488 issues in that twelvemonth topping the 376 for 1926 and 428 for 1925. Thus the years 1925, 1926 and 1927 show a total of 1292 bond issues for road, paving and bridge work, aggregating \$454,327,100, in the Southern States.

For 1927 an aggregate of 39 issues for \$29,762,000 places North Carolina in the forefront, individually, with Texas close behind, with 75 issues for \$28,092,000, and Florida next, with 100 issues for \$27,741,500. The sustained record of Florida is remarkable, in that it obtained \$40,100,000 in the previous year on 98 issues. North Carolina more than doubled the amount it obtained on bond issues in 1927 over 1926, while the 12

issues for Maryland, aggregating \$441,000 in 1926, ran to \$1,641,000 in 1927, also on 12 issues. Even in the States where such bond issues fell off, the shrinkage was slight and indicated that the financing had been so conducted that less heavy borrowings for road purposes were required to keep up new construc-

tion and maintenance at about normal progress.

Evidence that road, paving, bridge and viaduct work is proceeding in volume through the South is to be found in the subjoined table, showing bond sales for this class of construction in the 16 States, individually and in the aggregate:

### SOUTHERN ROAD AND BRIDGE BOND SALES.

	1927		1926		1925	
January .....	41	\$7,426,500	23	\$5,729,000	42	\$10,114,000
February .....	32	9,510,500	22	6,571,500	35	11,527,500
March .....	35	16,051,500	33	8,281,400	30	7,628,000
April .....	37	11,630,000	34	19,952,500	45	8,061,000
May .....	32	20,144,500	41	5,066,000	45	16,158,500
June .....	41	33,253,000	27	9,032,000	49	21,458,000
July .....	37	12,599,000	36	9,355,000	49	14,320,500
August .....	59	12,595,000	21	5,486,000	30	12,332,000
September .....	50	17,051,000	54	24,661,200	33	13,023,000
October .....	37	11,564,000	30	6,668,000	23	6,415,500
November .....	33	11,870,000	20	3,038,000	16	3,330,000
December .....	54	18,642,000	35	14,711,500	31	29,070,000
	488	\$182,337,000	376	\$118,552,100	428	\$153,438,000

### COMPARATIVE RECORD OF NUMBER OF ISSUES AND THE PAR VALUE OF SALES OF BONDS IN THE SOUTH FOR ROADS, PAVING, BRIDGES, ETC.

	1927		1926		1925	
Alabama .....	21	\$11,063,000	17	\$5,159,000	18	\$9,539,000
Arkansas .....	12	13,886,500	18	1,518,000	22	1,770,000
Florida .....	100	27,741,500	98	40,132,700	84	41,362,000
Georgia .....	15	1,562,000	17	2,416,000	15	2,111,500
Kentucky .....	19	2,828,000	16	3,026,000	10	1,144,000
Louisiana .....	24	6,344,000	19	6,296,900	28	4,964,500
Maryland .....	12	1,641,000	12	441,000	12	3,083,000
Mississippi .....	38	7,267,500	23	4,852,500	37	6,051,500
Missouri .....	8	5,943,000	5	15,165,000	6	15,325,000
North Carolina .....	39	29,762,000	42	14,268,000	67	33,708,500
Oklahoma .....	17	8,280,000	8	2,345,000	8	1,920,000
South Carolina .....	36	16,078,000	21	5,044,500	22	3,392,000
Tennessee .....	54	12,235,500	37	3,659,000	33	4,350,000
Texas .....	75	28,092,000	19	3,421,500	42	9,402,000
Virginia .....	6	1,915,000	9	5,388,000	9	1,440,000
West Virginia .....	12	7,698,000	15	5,419,000	15	13,875,000
	488	\$182,337,000	376	\$118,552,100	428	\$153,438,000

# CONCRETE Pavements

By W. F. LONG,

Assistant Manager, Southeastern Office,  
Portland Cement Association,  
Atlanta, Ga.

**P**ORTLAND cement mills in the Southeastern district, embracing Alabama, Florida, Georgia, Louisiana, North Carolina, South Carolina, Tennessee and Virginia, number 17, one in Louisiana, six in Alabama, four in Tennessee, three in Georgia, one in Florida and two in Virginia. These plants have an estimated annual capacity of 21,000,000 barrels, or about 4,000,000 tons. Four mills started production in 1927; one each at Tampa, Fla.; Cowan, Tenn.; New Orleans, La., and Birmingham, Ala. Still another plant is under construction at Knoxville, Tenn.

According to statistics compiled by the United States Department of Commerce, the consumption of Portland cement in the nine Southeastern States for the first eight months of the year was 11,753,890 barrels, or 545,478 barrels short of the same period in 1926, or an average monthly deficiency of 68,185 barrels. The total consumption in 1926 was 18,149,022 barrels. It is therefore estimated that the total consumption this year will be 17,330,804 barrels, or 818,218 barrels short of 1926.

In 1926, the nine Southeastern States consumed 10.94 per cent of the Portland cement used in the United States, whereas the population ratio is 17.7 per cent. The consumption per capita by the nine Southeastern States in 1926 was 0.97 barrels, as compared with 1.53 barrels for the country as a whole. Florida in 1925 and 1926 led all the other States of the Southeast in such consumption and North Carolina held the leadership for three consecutive years, beginning with 1922, its stupendous concrete road building program accounting very largely for its recent and present prominence.

## Consumption by States

The figures of these nine States in Portland cement consumption for the first eight months of 1927 were as follows:

State	Consumption first eight months of 1927. (Barrels)	Per cent of total
Alabama	1,346,241	11.46
Florida	1,912,187	16.29
Georgia	1,370,984	11.68
Louisiana	1,011,879	8.61
Mississippi	630,931	5.37
North Carolina	2,224,445	18.93
South Carolina	563,212	4.79
Tennessee	1,499,384	12.72
Virginia	1,194,627	10.15
Total	11,753,890	100.00

## How Portland Cement Is Used

Recent estimates indicate that Portland cement is now being used in the

Southeast approximately as follows:

Uses	Per cent
Public and commercial buildings	23.5
Houses (exclusive of rural)	7.6
Sidewalks and private driveways exclusive of rural	5.0
Small town and farm uses	16.3
Sewerage, drainage, culverts, conc. pipe	4.1
Paving and highways	33.5
Railways	5.1
Bridges, river and harbor work, dams and water-power projects, storage tanks and reservoirs	3.5
Miscellaneous uses	1.4
	100.0

The great popularity of concrete roads and streets is seen in the total estimated used in that field, which also makes allowance for cement required in the concrete bases of other types of paving.

## Concrete Paving Gains

There has been a healthy increase in the concrete pavement business each year over the preceding year during the period of 1920-27, with the exception of 1923, as shown by the following table:

Year	Pavement yardage	Per cent increase over preceding year
1920	2,827,383	...
1921	4,184,631	48.0
1922	8,578,263	104.7
1923	7,990,113	...
1924	9,682,223	21.2
1925	13,000,803	34.2
1926	17,721,406	36.3
1927	20,000,000*	12.8

\*Estimated.

It is of interest to note that the concrete pavement yardage in 1926 represents an increase of more than 500 per cent over 1920. The present year will undoubtedly show an increase of more than 600 per cent over 1920.

## Concrete Paving

While the general consumption of cement in the Southeast during the year will be about 1,000,000 barrels less than in 1926, as stated, 1927 will prove the banner year in the letting of concrete paving contracts. The concrete paving yardage let to contract from January 1 to December 3, 1927, was substantially in excess of that for the whole of 1926, and the yardage for that year was sub-

stantially in excess of any previous year. With a total of 18,159,038 square yards of concrete streets, highways and alleys placed under contract in 1927 to December 3, in the nine States, it is conservatively estimated that this will increase to well over 20,000,000 square yards by the end of the year. North Carolina produced the greatest pavement yardage this year to December 3, with close to 3,500,000 square yards, with Alabama and South Carolina running a close second and third. The other States in the order of yardage produced are: Tennessee, Georgia, Florida, Virginia, Mississippi and Louisiana.

Of the total yardage produced during the year to December 3, about 70 per cent represents highway paving and 30 per cent streets and alleys. At least 98 per cent of the concrete paving let to contract in 1927 is six inches or more in thickness, thus evidencing the fact that the Southeast is looking to the future by building substantial pavements.

**Alabama.**—Concrete paving contracts let in Alabama in 1927 will aggregate over 3,000,000 square yards, the largest yardage ever produced in this State in any year. Sixty per cent of this is highway paving and 40 per cent streets and alleys.

Concrete was selected for the paving of the Jemison Company's exclusive subdivision on Mountain Brook Estates, near Birmingham, one of the highest class developments of the kind in the South.

**Florida.**—Concrete paving contracts in 1927 total well over 2,000,000 square yards, of which 34 per cent represents highways and 66 per cent streets and alleys. While this yardage is about 750,000 less than that of 1926, it is in excess of any other year. Concrete paving has been somewhat handicapped by the apparent lack of suitable aggregates. During the year just passed this problem has been solved to a very large extent, due to the fact that several of the more important aggregate producers have made such changes to their plants as will produce concrete aggregate of satisfactory quality.

The first concrete paving in Miami was laid in 1927, contracts totaling over 200,000 square yards. All was constructed of local aggregates at a very reasonable cost.

On State Road No. 1, from Pensacola to Jacksonville, better known as the Old Spanish Trail, and on Road No. 4, or the Dixie Highway, extending south from Jacksonville along the Atlantic Coast, the State Road Department com-



pleted in 1927 many miles of 18-foot concrete road.

Of many excellent projects completed, three stand out as having interest other than providing the good riding quality of well built concrete roads: For 13 miles east of Tallahassee, one project traverses a beautiful, hilly country. For 16 miles north of St. Augustine, a smooth ribbon of concrete, extending toward Jacksonville and on the highway that carries many east coast visitors, is an excellent example of modern road construction. Farther south on the Dixie Highway, or Road No. 4, is an excellent 13-mile stretch of concrete highway completed this year, between Vero and Fort Pierce. The coarse aggregate used in the concrete was hard rock, mined and prepared from deposits within the State.

As a long needed link in State Road No. 5, the State Road Department in 1927 completed the reinforced concrete bridge spanning the Manatee River between Bradenton and Palmetto. It is 3600 feet long and cost over \$1,000,000. C. F. Lytle was the contractor.

Spanning the St. John's River at Palatka, on State Road No. 3, the \$1,250,000 Putnam County Memorial Bridge was

completed last year. It has an overall length of 4207 feet, made up of 10 concrete arches graduated from 57 to 77 feet in length, two isolated arches, 30 and 50 feet long; a double leaf bascule lift of 106 feet, and filled approaches of 1520 feet. The concrete bridge proper, with bascule lift, measures 2607 feet. A 30-foot roadway is provided, with a 5-foot sidewalk on the south side. This structure is a toll bridge and its construction was financed by a \$1,000,000 bond issue and \$250,000 in tolls collected on a replaced wooden structure. The bond trustees of Putnam county were: F. J. Fearnside, Sr., chairman; C. E. Currie, A. B. Harbison and J. W. Hart, secretary. The bridge was designed by Daniel B. Luten of Indianapolis, and the Stein Construction Company of Milwaukee built the reinforced concrete structures. The steel lift section was erected by the American Bascule Bridge Corporation of Pensacola, and the Southern Dredging Corporation of Jacksonville made the fill approach.

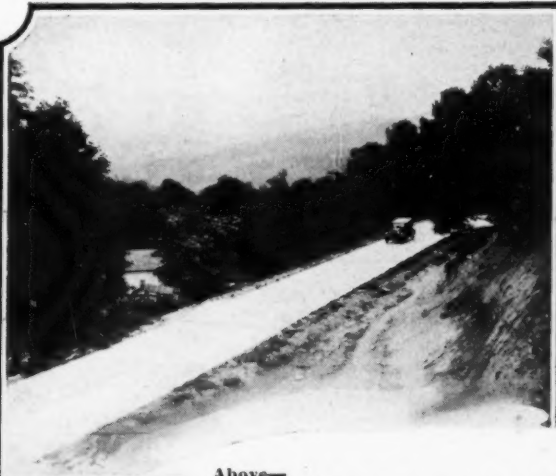
In 1927 the city of Clearwater completed a \$1,000,000 free causeway, linking the city on the mainland with the island beach. This causeway consists

of about two miles of dredged fill and two reinforced concrete arch bridges, 1000 feet and 300 feet in length, which are excellent examples of modern concrete bridge construction. The fill section is paved with two 18-foot roadways of reinforced concrete, with an intervening 20-foot park strip, which, with the sides of the boulevard, is beautified with grass, shrubs, trees and flowers. Excellent lighting is provided throughout by ornamental lighting standards on the sides, and in the central park strip of the boulevard portion. Indicative of the careful planning is the 18-inch inverted concrete curb construction provided on the outside edges of the paving of the roadways, to prevent any serious erosion or undermining of the paving in the very remote event of its being subjected to heavy seas in a storm. Bridge design and construction was by the Luten Bridge Company, and the paving contract was executed by the Noel-Topping Paving Company of St. Petersburg and Clearwater. William L. Alley is the city engineer.

**Georgia.**—Concrete pavement contracts in Georgia aggregate 2,500,000 square yards for 1927, which, although slightly



Above—  
An 18-foot Concrete Road in the South Handling a Daily Traffic of 1400 Vehicles.



Above—  
A Highway in the Mountains Near Asheville, N. C.



A Portland Cement Road in Caddo Parish, La.



Above—  
Concrete Road Near Tuscaloosa, Ala.



A 36-foot Concrete Highway in Tennessee.

less than the 1926 yardage, is greater than any other previous year. One of the most important highways paved with concrete during the year was a 33-mile section of the Coastal Highway, beginning just north of Midway and extending south through Liberty and McIntosh counties to Darien. This section was built by the William P. McDonald Construction Company of Lakeland, Fla., and Flushing, N. Y.

Another important concrete road recently completed is the highway extending south from within the city limits of Augusta for 63 miles along United States Route No. 1, through Richmond and Jefferson counties, the towns of Wrens and Louisville and terminating at the Emanuel county line. This project was started in 1925. The contractors were the Claussen-Lawrence Construction Co., of Augusta, Ga.; Carolina Contracting Co., Spartanburg, S. C.; J. R. & J. B. Miller of Baconton, Ga.; the Davis Construction Co., Atlanta, Ga., and Walter J. Bryson of Jacksonville.

Still another noteworthy project completed in 1927 was the \$250,000 Georgia-South Carolina Memorial Bridge, between Elberton, Ga., and Abbeville, S. C., erected in memory of the World War veterans of Elbert county, Georgia, and Abbeville county, South Carolina. It is of reinforced concrete, 1435 feet long, and was built by the E. M. Williams Construction Company of Monroe, Ga.

An important project at Savannah, financed out of a \$1,400,000 bond issue voted in 1926, is the Bay Street Viaduct over the Central of Georgia Railroad tracks. This viaduct now being built by the United Gas Improvement Company of Philadelphia at an approximate cost of \$400,000, is being paid for jointly by the city of Savannah and the Central of Georgia Railroad. It is 2700 feet long and 43 feet wide.

**Louisiana.**—The Pontchartrain Bridge across the eastern end of Lake Pontchartrain is one of the outstanding construction projects of the year. It is a reinforced concrete trestle structure of precast concrete piles, with deck and hand rails cast in place, and required approximately 125,000 barrels of cement. The Raymond Concrete Pile Company executed the contract under Ford, Bacon and Davis, engineers, for the Watson-Williams interests of New Orleans. This is a 5½ mile toll bridge.

Street and highway paving was checked largely by Mississippi River flood.

**Mississippi.**—Harrison county is completing 26 miles of step type seawall requiring upward of 200,000 barrels of cement. It stretches along the county shore on Mississippi Sound. Half of the contract was done by the Woods Brothers Construction Company and

half is being done by C. F. Lytle of Sioux City, Iowa, all under the direction of Hobart D. Shaw, consulting engineer, Gulfport, Miss.

Jackson county, after completing about 30 miles of concrete pavement east and west across the county, is now building a section of combination seawall and pavement, under the direction of a consulting engineering, Franklyn H. McGowan.

Hancock county has under contract to C. F. Lytle a 9-mile section of step type seawall requiring about 80,000 barrels of cement, to which it is now proposed to add a 36-foot reinforced concrete boulevard. This work will be done under the direction of J. W. Billingsley & Company, consulting engineers, New Orleans.

**North Carolina.**—Close to 1,000,000 barrels of cement will be used for North Carolina's concrete paving program this year, comprising, to December 3, 3,065,156 square yards of highways and 379,382 square yards of streets and alleys, or a total of 3,444,538 square yards.

**South Carolina.**—Never before has South Carolina been so active in road building as this year. The State Highway Department let to December 3 a total of 404 miles of hard surface road, of which 253 miles were concrete and the greater portion of the remaining 151 miles other types on concrete base. The total mileage let to contract in 1927 is estimated at 525. Altogether, there have been let to contract to December 3, 2,844,240 square yards of concrete pav-

ing, of which 95 per cent is classed as highway paving and 5 per cent streets and alleys.

One of the major projects is the \$500,000 reinforced concrete bridge across the Congaree River at Columbus, on State Route No. 2, being completed by the Hardaway Contracting Company of Columbus, Ga.

**Tennessee.**—Concrete paving contracts in Tennessee to December 3 totaled 2,317,078 square yards, of which 70 per cent represents highway paving and 30 per cent streets and alleys. This is a substantially greater yardage than during any previous year.

During 1927, Major D. H. Connolly of the Mississippi River Commission has been experimenting with concrete mats of various designs for determining an economical method of revetment and bank paving to replace the willow type now in use. At present, 4280 lineal feet of revetment and a like amount of bank paving are being placed opposite Island No. 2, 95 miles north of Memphis.

**Virginia.**—The completion last year of the 200 miles of concrete road connecting Richmond with Washington on the north and the North Carolina line near South Hill, Va., on the south marks an event of importance in the State's history.

A total of 1,439,579 square yards of concrete paving was let to December 3, this year, of which 75 per cent represents highways and 25 per cent streets and alleys. This is slightly in excess of the yardage for 1926.

## The Bus and the Electric Railway

The most important development in the use of buses by electric railways during 1927 has been the expansion of service, rather than the opening of new fields.

"The rapid transit idea is very popular and through bus lines are increasing," says Walter C. White, president of the White Company. "Shuttle and transfer lines are profitable under certain conditions, but some railways are at a disadvantage with stub-end bus lines that go nowhere. One advantage of buses in through-line service is that they can be quickly adjusted to peak and slack periods.

"I believe the trend of bus operation is toward a favorable combination of express and local service over the same streets. Speed, comfort and convenience are possible with faster service and greater frequency of buses. Express service on a street car line requires another track, but express buses can be added to suit the demand at far less ex-

pense and without interfering with local service.

"Special conditions and emergencies can be handled with less trouble and lower operating cost. Such emergency service for brief periods, put on quickly and withdrawn when the demand has been met, can be furnished with buses for a school which may be off the car line, for baseball games, boxing matches and other special events.

"Public popularity of buses is unquestioned. The most important advantage to the rider is better service. Safety is a big factor; for example, there are fewer accidents with passengers getting on and off buses at the curb than in getting on and off cars in the traffic congestion of the middle of the street. Traffic doesn't have to stop when the bus stops as it does in the case of the street car. There is more comfort, easy riding and luxury. There is greater flexibility of operation; if conditions change, the route can be changed, or if a street is blocked the buses can run around the obstruction. Also, the advantage to the public of express and local service is one of the highest importance.



# Resume of Southern Road and Bridge Construction by States

## Important Bridge Projects an Outstanding Feature of South's Highway Program in 1927 and Proposed for 1928 Most States Concentrating on Completing Through Routes

ON a foundation of practical, businesslike policy, established through the observations, and sometimes the vicissitudes, of experience, highway construction, with all its collateral branches and in all its ramifications, rises throughout the South in volume and in progression. Throughout the Southern States highway authorities have their eyes on the road for future traffic.

Because of its topography and the number of its streams, the South requires many types of road and bridge construction, and the study of materials has been profound, with a result that it now is pretty definitely known just what types are needed in each individual State and its subdivisions. This means a permanence, and economy in maintenance, which will go far toward stimulating increase in construction as the years roll by.

In their local work, moreover, the authorities endeavored to furnish through routes for travelers from other sections, rather than with an eye single to the selfish advantage of any one State, county or city. Realization is established that prosperity for any part of the South means prosperity for all the South, and that prosperity for the South contributes to the prosperity of the Nation.

On the whole, it may be said that road construction in the South, including bridges and all other phases, now is established on a basis of efficiency and economy that is not exceeded by any other section in the United States.

### Alabama

The beginning of the year 1927 in Alabama saw the last of the first \$25,000,000 road bond issue obligated by road and bridge contracts. Plans had been prepared from surveys completed under the former highway commission and new surveys authorized and placed under way, with the result that when plans became available in August last the highway

commission was able to ask for bids on a large volume of construction. Beginning with the August lettings and including those in December, the department placed under contract 808 miles of construction, including necessary bridges and culverts. The total value of these contracts was \$7,957,544.

The mileage was divided into 226 miles of paving, 236 of gravel or chert, 141 of sand-clay and 205 miles of grading and draining, or stage construction. It is the plan of the department to maintain this volume of construction during 1928. The commission adopted the following right of way widths: A minimum of 66 feet for secondary roads and a minimum of 80 feet for primary roads. The present practice in not awarding a contract until the rights of way have been secured has been of great assistance in getting the property owners to execute deeds and to reduce the prices bid for work. On primary roads, Alabama uses a roadway width of 28 feet in cuts and 30 feet on fills, with paving or other surfacing 18 feet wide.

### Arkansas

The Arkansas Legislature of 1927 in an amendment to the Martineau Road law, provided that State notes to the amount of \$52,000,000 may be sold during a period of four years to provide funds for highway construction.

On the 1927 program, 140 road and bridge contracts were let to November 30, totaling \$8,483,339.54, and covering 1096.36 miles of highways. On December 15 proposals were received on 40 additional jobs, covering 327.49 miles, the estimated cost of which was \$3,718,632.34, which, with the engineering and contingency fund, will bring 1927 obligations well over \$13,000,000. A summary by types on road contracts let follows:

	Miles	Cost
Grading and Drainage.....	702.07	\$3,782,414.45
Gravel Surfacing.....	338.41	1,551,534.28
Cement Concrete Paving.....	49.05	1,342,211.75
Asphaltic Types.....	6.12	43,233.04
	1096.36	\$6,719,393.52

The 1928 program contemplates contracting for the construction and surfacing of approximately 2400 miles at an estimated cost of \$18,927,000. This mileage by types is approximately as follows: Grading and drainage, 600 miles; gravel surfacing, 1400; concrete paving, 375; asphaltic types, 25.

Approximated 1927 funds were derived as follows: From auto license fees, \$4,400,000; gasoline tax (5c), \$4,900,000; miscellaneous, \$55,000; Federal aid, \$1,226,000; note sales, \$13,000,000; total, \$23,581,000.

Legislative appropriations for expenditures for the 1927 fiscal year are as

follows: Administration, \$275,000; maintenance highways, \$2,500,000; refund to counties, \$1,288,000; bond retirement, \$6,500,000; construction, \$13,000,000; total, \$23,563,000.

The bridge program in Arkansas is large because of the great number of major streams. Following is a tabulation of the bridges for which contracts were let during 1927:

Type	Lineal Feet	Cost
Timber.....	6,140	\$149,472.55
Concrete.....	9,263	914,106.29
Steel.....	6,110	1,294,200.68
	21,513	\$2,357,779.52

There are five projects under construction involving an expenditure of over \$1,500,000, as follows:

1—St. Francis River Bridge, Lee county; 2—St. Francis River Bridge, Polk county; 3—White River Bridge, Independence county; 4—Harahan Viaduct, approach to Harahan Bridge across Mississippi River, Crittenden county, and 5—Arkansas River Bridge at Dardanelle.

The 1928 bridge program consists of numerous small structures and several major projects. Among the major projects are two bridges across White River and two bridges over Red River at a total approximate cost of \$2,000,000. The 1926 General Assembly passed an Act authorizing the State Highway Commission to build toll bridges where it deemed advisable, these to become free when paid for from toll receipts. Several structures will be built under this Act this year.

### Florida

Between January 1, 1927, and December 15, 1927, the State Road Department of Florida let contracts as follows:

Work	Miles	Cost
Grading.....	354.65	\$2,866,231.27
Rock base surface treated.....	236.64	3,580,584.75
Bituminous Concrete.....	25.1	744,678.90
Sheet Asphalt.....	35.8	1,021,242.85
Bituminous Macadam.....	20.5	565,334.28
Plain Cement Concrete.....	52.41	1,663,557.29
Bridges, 22,371 feet.....		3,515,353.85
Total.....	725.1	\$13,926,983.25

Completed as of October 25, 1927, were 105.05 miles of concrete, 22.49 miles of bituminous concrete, 15.51 miles of sheet asphalt, 238.61 miles of rock base, 11.72 miles of sand-clay and 11.15 miles of bituminous macadam, a total of 404.53 miles. In the month of October were built approximately 39 miles of road and November and December about equalled October, making a total of 482 miles of road built in 1927.

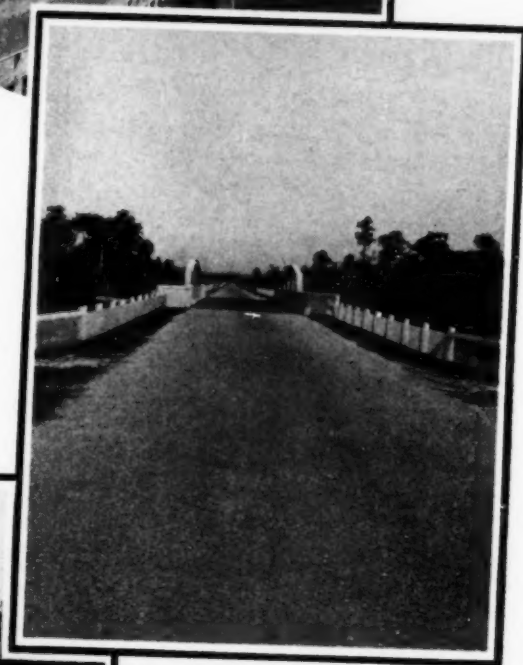
The number of feet of bridges completed in 1927 is estimated at from 15,000 to 18,000 feet. Expenditures, in-

January 5, 1928

Right—Bituminous Macadam Highway in  
Sumter County, Ala.



Reinforced Concrete Pavement in Hopkins  
County, Ky.



Surface Treated Lime Rock Road in  
Hardee County, Fla.



Surface Treated Top-soil Road in Newberry County,  
S. C.



Road in Mississippi County, Ark., With Asphaltic Top on  
Cement Concrete Base.



Oil Treated Road in Tennessee.



cluding construction, maintenance and administration, to December 1, amounted to \$20,292,951.73.

It is expected that \$17,000,000 will be available this year for Florida roads.

### Georgia

In Georgia, 397 miles of road were completed during 1927, at cost of \$7,840,938, and carried over to 1928, under construction, were 1226 miles, estimated to cost \$19,907,889.

Data for 1928 are not yet available.

Bridges completed during 1927 embraced 4.17 miles, and carried over to 1928 were 4.94 miles.

### Kentucky

During 1927 the highway department of Kentucky built 63 miles of reinforced concrete, at a cost of about \$30,000 a mile; 17 miles of native rock asphalt, approximately \$27,000 per mile; 70 miles of bituminous macadam, approximately \$24,000 per mile; 60 miles of waterbound macadam, approximately \$18,000 per mile; 179 miles of traffic bound macadam, approximately \$8000 per mile, and 267 miles of gravel surfacing, approximately \$15,000 per mile, and 420 miles of grade and drain, approximately \$12,000 per mile, a total of 1076 miles at an approximate cost of \$14,500 a mile.

In addition to the road mileage, the department built during the year a number of important bridges, together with grade separation structures. The Camp Nelson Bridge over the Kentucky River is nearing completion, consisting of the main river steel span of 275 feet and five 50-foot approach spans. Across Tygart Creek is a new triple arch span consisting of one 110-foot span, two 108-foot spans and two 30-foot approach spans. Another structure over the Levisa fork of the Big Sandy River and the Chesapeake and Ohio Railway consists of three 190-foot and one 70-foot span. One bridge over the Licking River consists of two 154-foot steel spans and a structure over the Tradewater River consists of one 164-foot steel span.

In addition to the construction completed during 1927, the department maintained in condition the following mileage, by types of roadway, at an annual expenditure of \$2,500,000:

Types	Jan. 1, 1924	Nov. 1, 1927
Brick .....	5,198	4,498
Bituminous .....	13,756	20,978
Reinforced concrete ..	47,704	195,550
Rock asphalt .....	105,151	165,312
Bituminous macadam ..	49,827	89,329
Waterbound macadam surface treated ....	659,254	993,808
Waterbound macadam ..	126,942	44,430
Traffic bound macadam .....		155,701
Gravel .....	191,107	765,685
Grade and drain .....	348,431	462,834

This outstanding year of progress has added a big mileage to the interstate routes across Kentucky.

### Maryland

The Maryland Legislature of 1927 authorized an additional 2 cents gas tax, making a total tax of 4 cents, half of which is to be used as formerly, for maintenance and reconstruction, 1½ cents for lateral roads and a half-cent for the elimination of grade crossings.

During 1927 Maryland spent for construction \$3,700,000, of which \$635,000 was derived as Federal aid, \$300,000 from the counties and \$2,765,000 from

the State bond issues and gasoline tax. This sum constructed 82 miles of concrete roads, 4 miles of macadam roads, 20 miles of gravel roads and 6 miles of sheet asphalt streets in Baltimore city. Out of this sum there also have been built 18 modern reinforced concrete or steel bridges to replace old and inadequate structures.

For maintenance and reconstruction there was spent \$4,150,000, a portion of which was used to build 86 miles of concrete shoulders along existing roads. Also the double-decking of the Havre de Grace bridge was completed.

The Robert Crain Highway, 31.5 miles long, was completed, giving a direct outlet by modern highway from Southern Maryland.

There will be available for maintenance and reconstruction approximately \$4,170,000 this year.

Route markers are being placed on all Federal and important State roads, which, in conjunction with existing direction and distance signs, "makes it harder to get lost in Maryland than to find your way in many States" as State Roads Chairman John N. Mackall puts it.

### Missouri

In accordance with the Centennial Road law, the Missouri State highway system of 7640 miles is divided into primary and secondary roads, of which approximately 1500 miles are in the primary system and the remainder in the secondary system. The estimated cost of constructing the primary system is \$69,000,000, and the secondary system \$137,000,000, or a total for the entire system of \$206,000,000. This estimate is based upon the types of pavement as now designated for the various routes. Of this \$206,000,000, it now has \$112,500,000 spent or under contract, leaving a balance of \$94,500,000 necessary to complete the system. Of this total, the motor-owners through license fees and gasoline tax will have paid approximately \$166,000,000 with Federal aid totaling \$40,000,000. The amount of Federal aid received by the State of Missouri to date is \$22,786,436. The State also has floated a bond issue for \$60,000,000.

The anticipated revenue for constructing roads this year is \$13,100,000, which, with \$4,900,000 carried over from 1926, gives a total of \$18,000,000 for this year's construction. Missouri will, with this amount of money this year, do 660 miles of grading and build the necessary bridges, and construct 609 miles of hard surfacing, consisting of concrete and gravel. The estimated receipts available for construction in 1928 will be approximately \$10,000,000.

### North Carolina

Approximately \$18,250,000 will be spent by the North Carolina Highway Commission on roads and bridges during 1928 and approximately 900 miles of road will be completed, including about 400 miles of hard surfaced and 500 miles of dirt roads.

Wilmington's \$1,250,000 bridge across the Cape Fear River is scheduled to be started this year.

About \$24,000,000 was spent by the State on roads and bridges during 1927.

The total mileage of State maintained highways was estimated at 7416 on

January 1, 1928, which includes, in addition to the hard surfaced highways, 808 miles of gravel and top soil treated highways, 2218 miles of gravel and top soil untreated highways; 779 miles of graded and drained, but not surfaced highways, and 223 miles of dirt roads. There is a total of 60,000 miles of roadways in North Carolina, including everything from partially passable highways to those which have been highly improved by the State.

### Oklahoma

Of the 6000 miles of highway now on the State system, about 1790 miles were surfaced at the beginning of 1927, but 400 miles of this surfacing should be considered as temporary, while 800 miles is so-called hard surface paving. The balance of it is mostly graveled road construction. In addition, at the beginning of 1927, 1100 miles of State highway had been permanently located, graded and drained.

During 1927 contracts were awarded for over 130 miles of hard surface paving and all but about 35 miles was completed by the end of the year. Contracts have also been awarded for 358 miles of grading and draining of roads which had previously been unimproved, but only about 200 miles of this was completed by the end of the year.

The construction and maintenance program with the State Highway Commission amounts to over \$10,000,000.

Plans for 1928 contemplate about the same amount of construction and maintenance work as for 1927, except that there should be a normal increase of approximately 10 per cent in the income of the highway commission, due to the increase in the number of automobiles and the increase in the amount of gasoline tax. In addition, the counties are engaged on a comparatively large county road building program. In the past year a larger number of counties have voted bond issues than in any year previously, which will materially increase the amount of county work being done.

### South Carolina

In 1924 the "Pay-As-You-Go" Act was passed in South Carolina, turning over to the highway department 3 cents of the gasoline tax and raising the motor vehicle license fees so as to increase substantially the revenues from that source.

The system established by the "Pay-As-You-Go" Act comprised 4740 miles, of which 3101 miles, or approximately 65 per cent, had been improved at the time the Act was passed. Of the improved roads, however, only about 228 miles had been paved.

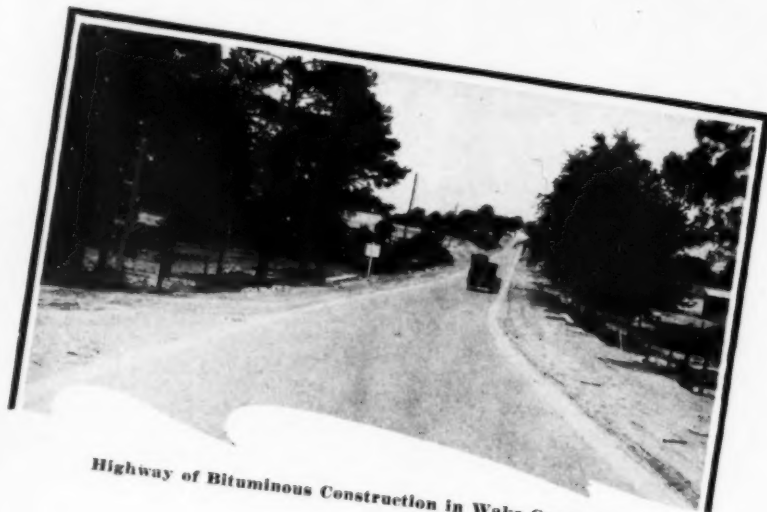
Since September, 1926, the department has executed reimbursement agreements with the counties to the amount of \$30,000,000, as compared with \$7,264,115.82 executed before that time.

During 1927, 530 miles of hard surface roads were let to contract at an estimated cost of \$14,500,000. Of this amount approximately 275 miles will be constructed during 1928. About 290 miles of earth type roads were let to contract at an estimated cost of \$2,000,000, and bridge work let would increase this total another \$1,000,000.

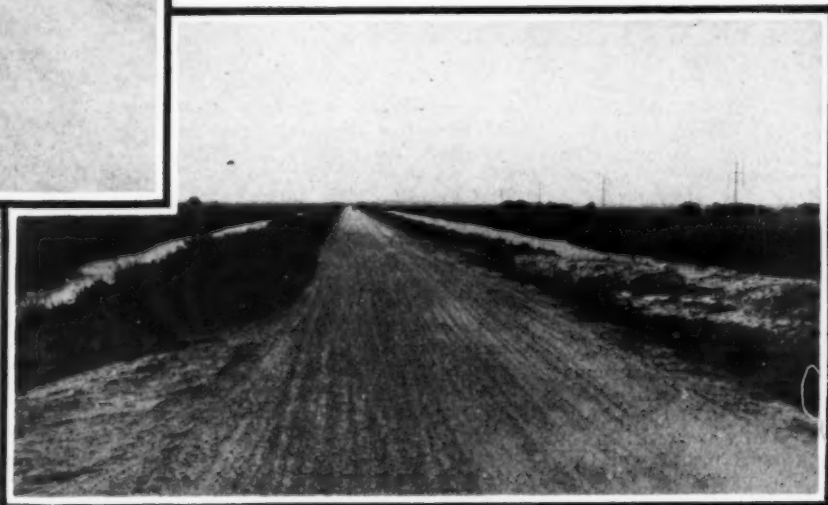
Funds are now available for 1928 construction of 300 miles of hard surface, and 100 miles of earth type construction,



Asphaltic Surface Treatment  
on Gravel in Hampshire Coun-  
ty, W. Va.



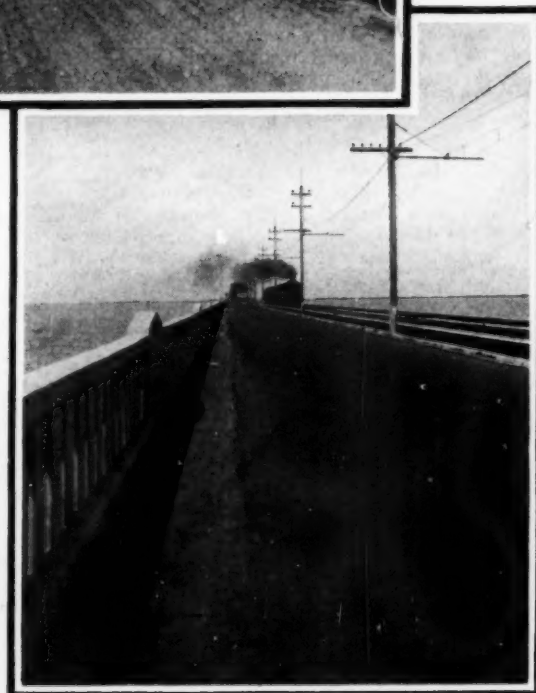
Highway of Bituminous Construction in Wake County, N. C.



Louisiana Approach to Sabine River  
Bridge, About Four Miles Through  
Swamp.



Gravel Road  
in LeFlore County, Okla.



Causeway Over Bay Between Galveston and  
Houston, Tex.



as well as several major bridges, and it is believed that by April additional funds will be made available.

### Texas

The story of State highway work in Texas is told by the State Highway Department in a nutshell, in the form of three summaries, as follows:

#### PROJECTS LET IN 1927

Type	Mileage	Cost plus 10 per cent
Concrete pavement...	213.79	\$6,174,431.28
Bituminous .....	64.51	643,764.96
Gravel or iron ore soil or macadam...	25.83	60,548.67
Shell, caliche or sand clay .....	18.19	58,416.36
Grading and drainage structures...	289.47	1,610,695.94
Bridges .....	.11	496,982.64
Total .....	611.79	\$9,044,839.85

#### COMPLETED PROJECTS IN 1927

Type	Mileage	Cost
Concrete pavement...	107.51	\$2,923,510.19
Bituminous .....	364.25	4,558,380.60
Gravel, iron ore soil or macadam...	76.48	1,022,764.66
Shell, caliche or sand clay .....	25.02	186,687.89
Grading and drainage structures...	389.45	2,648,752.48
Bridges .....	.16	1,161,368.21
Total .....	962.71	\$12,501,464.03

These figures show only the actual work done during 1927, and in a number of cases the cost of the bituminous and concrete surfacing includes only the actual surfacing and not any grading or drainage structures.

#### PROJECTS UNDER CONSTRUCTION

Type	Mileage	Cost
Concrete pavement .....	206.82	\$5,957,979.99
Bituminous .....	39.29	563,919.36
Gravel, iron ore or macadam .....	25.83	60,548.67
Shell, caliche, sand clay .....	18.19	58,416.36
Grading and drainage structures...	321.95	2,149,631.50
Bridges .....	.11	880,634.40
Total .....	612.08	\$9,671,130.28

No legislation went into effect during 1927 that in any way affected either the construction, financing or traffic of highways.

### Tennessee

During 1927 Tennessee, through its department of highways and public works, expended more than \$15,000,000 for State highway improvement. More than \$3,500,000 was spent on maintenance.

The entire State system of highways, 5051 miles, officially increased on January 1, 1928, to 5592 miles, is maintained by State forces. Five contract lettings were held during 1927, involving the construction of 485 miles of roadway and bridge construction, valued at \$13,200,000. This included the construction of 175 miles of high-type pavement, 155 miles of which had been previously graded; 330 miles of grading and drainage, 8 miles of waterbound macadam and bridges. The largest single letting of road construction contracts occurred on September 16, when 158 miles of road and bridge work, valued at \$5,700,000, was placed under contract.

In addition to the work let to contract, approximately 367 miles of macadam, chert and gravel roads were oil treated by State maintenance forces. More than 350 additional miles of roadway were surfaced with gravel and heavy maintenance work has accounted for many more miles of improved roadway, thus

providing better alignment and grades.

The 1927 legislature made provision for the construction of toll bridges on the State highway system, authorizing the issuance of \$11,500,000 in bonds for that purpose, the bonds to be retired by the tolls. Fourteen of the bridges to be constructed will replace ferries at or near the bridge sites, and their completion will cause a reduction in the use of other ferries at near-by points. Eight of the bridges will span the Tennessee River, and three of these are already under construction. An existing bridge over the Cumberland River at Carthage was purchased, so that at present only one bridge of the first series of eight bridges remains to be placed under contract, and that will be done on January 18. The second series, consisting of six bridges, will be let to contract before January 1, 1929, and the third series, consisting of three, will be under construction before April 21, 1929.

It is estimated that expenditures for highway improvement will slightly exceed \$20,000,000 in 1928.

### West Virginia

On its State road system, West Virginia completed during 1927 virtually 528 miles of all types of hard surfacing, and 373 miles of grading and draining. The total paid for construction during the year was \$11,871,637.25, and for maintenance \$2,117,247.83. Work under contract and carried over into 1928 includes 101.78 miles of grading and draining, and 71.92 miles of hard surfacing.

Work on West Virginia roads not on the State system included the completion of 251 miles of hard surfacing and 263 miles of grading and draining, the approximate total cost of which was \$7,000,000.

Among the larger bridges completed

during the year were Daily Bridge across the Shenandoah, 1000 feet; Peck's Mill Bridge, 656 feet long, and Watson Bridge, 457 feet. An important bridge across the Potomac, at Paw Paw, 620 feet in length, is being constructed jointly by Maryland and West Virginia.

Reissue of a total of \$15,000,000 of State road bonds, as similar amounts of the original \$50,000,000 issue are retired, was voted by the 1927 session of the legislature. It was also voted to submit to the people a constitutional amendment providing for an additional State road bond issue of \$35,000,000, to be voted upon in November, 1928.

Total funds available for new contracts for 1928 will not exceed \$3,000,000, while maintenance will run slightly more than \$2,000,000. Work carried over will require an additional expenditure of approximately \$2,700,000.

Roads completed in 1927, by types, were as follows: Concrete, 66.65 miles; bituminous macadam, 97.09; gravel, 240.09; shale, 80.79; stone base, 43.75; graded and drained, 373 miles.

Work carried over includes: Concrete, 17.47 miles; bituminous macadam, 21.10; gravel, 11.1; stone base, 20.12; grading and draining, 101.78 miles.

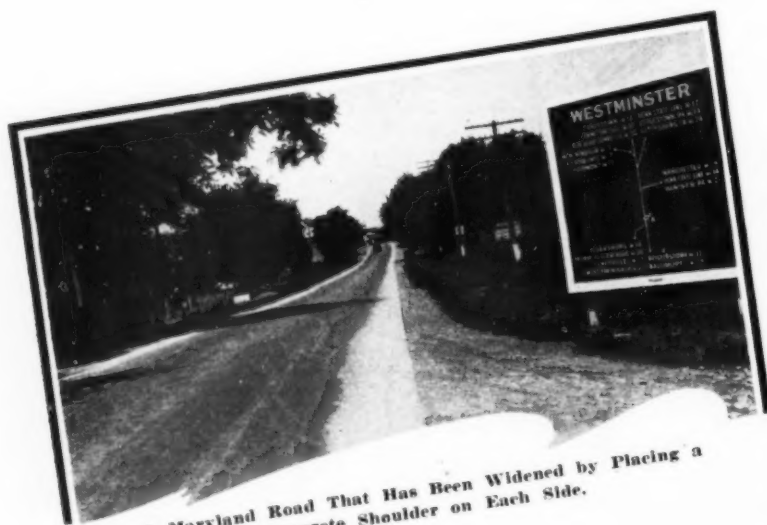
### Virginia

The fiscal year of Virginia ends on June 30, and in the period from July 1, 1925, to June 30, 1927, there was added to the State highway system about 400 miles. Conditions as of June 30, 1927, are thus summarized by the State highway commission in the table herewith.

There has been appropriated under the Federal Aid law to Virginia \$13,466,371.79, of which there has been paid to the State \$13,234,859.80.

#### Road Building Activity in Virginia Summarized.

Type	Completed		Completed	
	July 1, 1925-June 30, 1926	Cost	July 1, 1926-June 30, 1927	Cost
Concrete .....	94.017	\$3,260,284.00	73.952	\$2,600,489.45
Bituminous macadam .....	109.489	3,593,807.65	84.882	2,780,288.04
Surface-treated macadam .....	35.226	873,323.78	29.250	841,615.10
Loose-stone macadam .....	.....	.....	.670	4,247.73
Slag .....	.....	.....	1.970	46,279.18
Gravel .....	51.108	705,369.44	.....	.....
Top soil .....	18.690	135,118.83	30.923	279,486.03
Sand clay .....	.750	6,582.97	.....	.....
Graded and drained .....	54.110	1,130,686.76	11.292	265,269.72
Total .....	363.390	\$9,705,173.43	232.939	\$6,817,675.25
Miscellaneous .....	.....	32,470.23	.....	2,692.62
Oil treatment .....	29.300	55,396.64	.....	.....
Widening concrete surface .....	.....	.....	11.740	195,600.70
Grand total .....	.....	\$9,793,040.30	.....	\$7,015,968.57
RECONSTRUCTION AND RESURFACING.				
Bituminous macadam .....	2.600	\$9,281.95	1.700	\$34,901.39
Surface-treated macadam .....	.....	.....	.....	.....
Gravel .....	.....	.....	.....	.....
Top soil .....	.....	.....	.....	.....
Total .....	2.600	\$9,281.95	1.700	\$34,901.39
Betterments .....	.....	.....	.....	.....
Widening and oiling .....	.....	.....	434.000	1,303,526.94
Bridges and masonry over 20 ft. long .....	.....	590,150.10	.....	463,027.91
Other masonry .....	.....	36,565.61	.....	12,190.36
Total .....	.....	\$626,715.71	.....	\$475,218.27
Under construction				
Type	Miles	Contract or allocation	Paid to June 30, 1927	
Concrete .....	121.064	\$4,781,435.82	\$1,933,126.31	
Bituminous macadam .....	78.650	2,913,610.99	2,095,547.00	
Surface-treated macadam .....	.....	.....	.....	
Gravel .....	45.670	907,811.25	525,752.06	
Top soil .....	19.946	277,912.52	158,576.15	
Graded and drained .....	110.831	2,146,338.74	1,041,084.31	
Miscellaneous .....	.....	6,000.00	4,319.79	
Total .....	376.161	\$11,033,109.32	\$5,758,405.62	
Betterments .....	.....	.....	.....	
Widening and oiling .....	322.000	965,774.00	490,768.77	
Bridges .....	.....	1,721,170.32	822,908.61	
Other masonry .....	.....	37,073.11	97.26	
Grand total .....	.....	\$13,757,126.75	\$7,072,180.26	



A Maryland Road That Has Been Widened by Placing a Concrete Shoulder on Each Side.



A Section of the Jackson-Canton (Miss.) Highway Completed Last Year.



State Highway Bridge Across the James River at Galena, Mo.



Rock Asphalt Pavement in Jackson County, Ga.



A Wide Road of Concrete in Virginia.



### **\$3,000,000 CEMENT MILL FOR NORTH CAROLINA.**

**To Start With Rated Capacity of 1,500,000 Barrels Annually—Marl, Shell, Clay Deposits Regarded As Sufficient for Many Years.**

Plans have been completed for the construction of the proposed \$3,000,000 cement mill near New Bern, N. C., by the Carolina Cement Company, organized with J. A. Acker, president; F. R. Patterson, vice-president, and R. O. Clark, secretary. Mr. Acker is chief engineer of the New Egyptian Portland Cement Company of Port Huron, Mich. The plant will be located between Trent River and Pembroke road, and will have adequate highway, water and railway transportation facilities, it is said.

Properties have been purchased and leased by the company, estimated by H. J. Bryson, State geologist, Raleigh, to contain a sufficient supply of cement-making materials to last the proposed mill for many years. It will start operating with a rated capacity of 1,500,000 barrels per year. Regarding these materials, Mr. Bryson says:

"The deposit of marl and shell rock outcrop along the Trent River for a distance of 10 or 15 miles and extend back from the river for a considerable distance. The company has control of the most important and most accessible deposits. There seems to be sufficient material to last for many years. Generally speaking, the overburden is light and the average thickness along the river is 20 feet, getting thicker, however, back from the stream. Analyses made by Dr. E. E. Randolph, chemical engineer, State College, Raleigh, show a calcium carbonate content of from 89 to 95 per cent.

"The clays to be used are along the Norfolk and Southern Railway southeast of New Bern. Analyses of these clays were very favorable. Also overlying several of the marl deposits are found layers of good clay from 10 to 15 feet thick which may be utilized later. After analyzing the materials Dr. Randolph stated that he felt the materials were suitable for making a very high grade of Portland cement."

### **Ice Companies Fared Well in 1927.**

Ice manufacturers throughout the country found 1927 a good year, according to reports received by John Nickerson Company of New York city, who add that earnings of practically all the leading organizations in the industry, including Southern Ice and Utilities, have exceeded expectations. A number have increased their dividends or have declared extras.

Per capita consumption is showing a continuous upward trend and it is estimated by engineers that the per capita consumption will approximate 1000 pounds a year in 1936. This would provide a 60 per cent increase in output for the industry over the next nine years.

The development of mechanical refrigeration has benefited rather than hindered the ice industry since advertising of these machines has broadcast refrigeration publicity, according to the Nickerson & Co. report.

### **\$377,000 Contracts on Shreveport School.**

General contract has been awarded by the Caddo Parish School Board, Shreveport, La., to the Werner Company of that city for the erection of the Fair Park High School. Edward F. Neild of Shreveport is architect. Plumbing and heating contract has been let to the Fitzgerald Plumbing Com-

pany, Shreveport, and contract for wiring to J. M. Trim. The total of these contracts is \$377,000. The building will be of reinforced concrete and steel frame construction, with brick and stone trim, three stories, fireproof, to contain 30 classrooms and auditorium to seat 1000.

### **Developing the Mineral Interests of the South.**

Judge J. H. Hand of Yellville, Ark., who is a member of the Arkansas department of mines and geology and of the board of governors of the Southern division of the American Mining Congress, in a recent statement said:

"The mineral production of Arkansas in 1926 was valued at \$87,000,000, from which the State received \$2,000,000 in severance taxes. A large portion of the mineral production consists of oil. Arkansas has a number of mineral resources, chief among which are zinc, lead, manganese, coal, oxide and various forms of valuable clays. But, the mining industry, except for bauxite, is in a very limited stage. Arkansas produces 70 per cent of the bauxite mined in the country. During the war, when the older fields were unable to meet the pressing demands for the production of lead, zinc and manganese, the north Arkansas fields came to the rescue. It happens that these fields are off the main travel paths of the industry. The trend of mining operation has been westward and the South has been overlooked."

Judge Hand stated that the American Mining Congress has done much in drawing the attention of the mining industry to the mineral possibilities of the South by having its representatives investigate these resources, resulting in the discovery of "virgin fields of various valuable minerals." He added:

"The American Mining Congress is pointing the way to the mining fraternity into these fields. I hope the mining industry will cooperate in the development of these fields in the South, instead of going to Chile and other countries, as the foreign products compete with our own. The expansion of home industry and the making of an all-American mining industry will compensate for any cost that any branch of industry may have to bear by reason of this cooperation in the development of these fields."

"I regard the American Mining Congress as one of the greatest organizations of this country. I have known it and followed it closely for 20 years. When the American Mining Congress began its work, the mining industry was regarded as a game of chance and luck and was looked upon with suspicion by business interests. Mining is now reduced to a science, and ranks in prestige with other lines of business. The work of the American Mining Congress in bringing and holding together the mining industry and purging the mining industry of fraudulent practices has elevated the mining industry to a basis of confidence on a parity with other lines of business."

"Since the American Mining Congress has made its influence felt in the South, many business men of Arkansas have awakened to a realization of mining opportunity in the State. Arkansas has zinc, lead, manganese, lime, phosphates, cement, marble and the finest building stone in the world. Within a few years, Arkansas will be able to meet the demand for electrical energy for smelting and mining and other industries."

### **Bids on \$500,000 Baltimore Church.**

Bids are being considered for the erection of a \$500,000 church for the congregation of SS. Philip and James Catholic Church at Charles and 29th streets, Baltimore. The structure will be 216 by 160 feet, of steel and concrete, with limestone exterior and interior of vaulted construction, marble floors, ornamental tile roof and vacuum heating system. It will seat 925. Theodore Wells Pietsch is the architect, Herman Eisert, mechanical engineer, and Henry Massart, structural engineer, all of Baltimore. All equipment except furnishings will be included in the general contract.

## Definite Progress in Louisiana.

By BEN JOHNSON, President, Commercial National Bank, Shreveport, La.

Some disparity still exists in the purchasing power of the farmer's dollar and there are still some unfortunate differences between the market price and the cost of production of his commodities. But this section, agriculturally, has recorded definite progress toward agricultural recovery and stability in the past few years. Particularly was this true in 1927 when we made fair crops that apparently were marketed at a nearly fair price, and more than an average of cotton remains in the hands of the producers, after their seasonal liquidation.

In addition, more food and feed crops throughout the territory than usual have been made, thus enabling our farmers to make further progress in competing in this game which engages all America in producing commodities and goods at less cost. In the face of this unusual amount of food and feed crops, there might be a tendency in some quarters to pitch the crops on a larger scale, but the more thoughtful farmers and bankers are counselling a program of conservatism in this respect. If this conservative policy is pursued, 1928 offers a fair opportunity for agriculture in this section.

Fall trade has been somewhat slow, but inventories are low and our merchants are experiencing no inconveniences because of this fact.

There is an overproduction in oil and a similar condition in lumber, though less pronounced in this latter industry. Many feel that these industries are emerging from "the trough of the wave" and 1928 gives promise of better conditions in both industries.

The ever extending radius of oil producing areas in this territory and the success in continuing to find oil in new horizons in old areas continue to support a potential oil value to a vast territory in this section, and lease rentals to the farmers have been an important factor in sustaining and stimulating land values in the territory.

There is plenty of money and credit available for all legitimate enterprises, at fair rates, and we are looking forward in full confidence to a normal volume of general business to be done along conservative lines. In fact, one of the encouraging signs we note is that our business men in all lines are acquiring the habit of conservatism and we are having a much better informed business and financial community, from year to year, which is an added earnest of this stability of our general position.

## A Fine Sentiment.

The Christmas greetings of the Exchange Saw Mills Company of Kansas City carried the following fine bit of sentiment:

"'Goodwill to men'—the great refrain of the Angelic hosts on that first Christmas morn is still and will always continue the greatest asset in our business and social life.

"Consequently, it has been the aim and purpose of this company not only to retain but extend, good-will to its patrons by the quality and character of its service, realizing that they who serve others best serve themselves best."

## Truck Wheels of Cotton.

The use of cotton fabrics in the manufacture of truck wheels and casters is outlined in a survey by the New Uses Section of the Cotton Textile Institute, Inc., New York city. These cotton fabric wheels have been used for several years in hospitals, banks, department stores, restaurants, factories,

office buildings, libraries and railway terminals and such use appears to indicate a large market in other manufacturing plants, and particularly in textile plants where a great variety of trucks are required, according to E. C. Morse, head of the New Uses Section of the Institute. Mr. Morse states that, "in our study of this use of cotton, it was found that the fabric could be so utilized as to make a wheel of remarkable durability, and at the same time combine the silence of soft materials."

## International Advertising Convention at Detroit—\$1,750,000,000 Invested Yearly in Publicity.

A résumé of the plans for the International Advertising Exposition and the Twenty-Fourth International Advertising Association Convention, to be held in Detroit, Mich., July 8-12, 1928, is announced.

In answer to the question, "Why an International Advertising Exposition?" the Exposition Committee says:

"There is today approximately \$1,750,000,000 spent on advertising annually. It is America's third largest business, and occupies a relative importance in many other countries of the world. Yet the average executive little appreciates the real position advertising holds as a factor in moving goods from their raw state to the ultimate consumer. There is a definite and positive place for a great Advertising Exposition, and no more logical place for it to appear than at the united gathering of representatives of all advertising groups, which, in this instance, will be the International Advertising Association Convention. At Olympia in London last summer was held an Exposition of advertising occupying 80,000 square feet of space, which drew an attendance of 150,000 persons, including some of the highest officials and executives of Great Britain and the Continent."

The Detroit Committee urges the participation of every branch of advertising in a full and representative way in the forthcoming convention. It recommends the following three classes of displays:

First, displays by individual firms; second, displays by associations—that their work and part in the advertising and marketing plan may be fully understood, and third, displays by countries, sections of countries, cities and communities for the purpose of giving by carefully compiled charts, figures, pictures and other mediums of display, a true idea of the marketing importance of such sections so that the buyer of advertising may have full appreciation of that district and include in his appropriation a fair proportion of the "Advertising Dollar" he will spend.

Officers for the Detroit Convention Board for this gathering include Clifton F. Berry, of the Union Trust Company, as general chairman, and the following associate general chairmen:

Publicity, Charles W. Brooke, Brooke, Smith & French, Inc.; Program, Verne Burnett, General Motors Corporation; Sustaining Membership, Frederick Dickinson, Hupp Motor Car Corporation; Exposition, Ward H. Marsh, McKinney, Marsh & Cushing, Inc.; Convention, Joseph Meadon, Franklin Press and Offset Company; Convention Host, George M. Slocum, Michigan Business Farmer; Treasurer, Elmer P. Grierson, Sprague Publishing Company; Recorder, Harold M. Hastings, Adcraft Club of Detroit; Women's Advertising Club of Detroit, Edna E. Lynn, Boulevardier; Managing Director, Charles W. Collier, Charles W. Collier Organization; Managing Secretary, Paul S. Van Auken, and Exposition Secretary, Lois F. Gibson.

## 200-Mile Oil Pipe Line to Cost \$2,000,000.

Mexia, Texas, December 24—[Special.]—An additional 8-inch pipe line will be constructed by the Sinclair Pipe Line Company of Tulsa, Okla., from the Mexia oil field to Healdton, Okla., about 200 miles, at an estimated cost of \$2,000,000. The new pipe line will connect with the Oklahoma-Houston main trunk line and increase capacity to a minimum of 3000 barrels daily.



# IRON, STEEL AND METAL MARKET

## Pittsburgh Steel Market.

Pittsburgh, December 31—[Special.]—With a total of about 10,000 freight cars bought during the month of December, freight car buying has developed again after six months of substantially no activity. An actual count shows 9462 freight cars bought thus far, in less than four weeks. About 250,000 tons of rails were bought during the month, about 600,000 tons having been taken in November and 700,000 tons in October.

Automobile trade buying of steel has increased somewhat, but is still at a very low rate. For a time there was hardly any buying. Production of passenger cars and trucks in the United States and Canada in September and October was one-third less than in the same months of 1926, while November was off 47½ per cent, the 11-month decrease being 21 per cent, as there were only slight losses in the first five months of the year. An automobile shortage is accumulating, and 1928 production may exceed the record made in 1926.

### December Steel Production Sustained.

In bars, shapes, plates, wire nails and sheets, demand and production have been stimulated in the past few weeks by price advances, buyers having an opportunity to secure material at old prices by making prompt purchases or specifying against contracts now expiring. This has tended to sustain steel production in December, while in January the influence will be the other way. For four successive years steel production has increased sharply after January 1 to a peak in March. This time the increase promises to be more gradual, extending into April or May. The chances are plain that 1928 steel production will exceed that of 1927, which is off 7 to 8 per cent from the record, made in 1926, and it would not be difficult for 1928 to break the 1926 record.

Bars, shapes and plates are under contract for first quarter at 1.80 cents, Pittsburgh, and specifications have been heavy on the lower priced contracts expiring December 31. Wire nail makers insist that the new card of extras of December 1 will be fully observed, and that the base price will be \$2.55 per keg. This would make a double advance, and specifications on old contracts have been heavy. The new prices will not receive much test for a while.

In the case of sheets, the mills have sold very freely for first quarter at the old prices, so that the advance when it becomes technically effective will not apply to much tonnage. Independent sheet mills reported unfilled obligations at the middle of December of 620,000 net tons, and it is estimated that December 31 was about 750,000 net tons, the largest since October 1, 1926. The advance is to 2.90 cents, from about 2.75 cents, on black sheets, and to 3.75 cents, from about 3.60 cents, on galvanized sheets. Blue annealed sheets are simply put firmly at 2.10 cents, but with an extra of \$2 a ton on 40-inch and greater width, there having formerly been no such extra. Automobile sheets remain at 4.00 cents, and there has been little buying in that line.

### Interest Rests In Prices.

At the present time the steel producing trade is much more interested in prices than in tonnage. It is felt that tonnage takes care of itself, being in no danger of decrease, while there is no chance in the near future of its working up to productive capacity and thus putting prices up by that route.

Heavy melting steel scrap is \$15 to \$15.50 delivered Pittsburgh district, having advanced altogether \$1 a ton during the month, from the lowest level since 1921. Much scrap has been held back on account of low prices and, while mills will

buy much more freely in the next few weeks, little further price advance is expected.

The valley pig-iron market is not altogether as dull as it was a month ago. Furnaces are trying to restore the \$17.50 price on foundry iron, following the recent decline to \$17.25.

## The Metal Market.

New York, December 31—[Special.]—The non-ferrous metal producers are entering the new year under favorable auspices. It is true that prices are below the average for the time of year, but it also is true that consumption for the world as a whole is larger. Metal producers share in the optimism which prevails throughout the business world.

The feature of steel business has been the great spurt in buying of rolling stock by the railroads. Probably 68,000 cars were purchased in 1927, 1000 more than in 1926, 15,000 cars having been bought during the last 10 days. Various non-ferrous metals will be used in their construction, in bearings, electrical equipment in passenger cars, etc.

### Year-End Dullness Noted.

Among the metals themselves the usual year-end dullness prevailed. As the year closed, the prices of lead and zinc were hovering at the extreme low points of the year. Copper was 1½ cents per pound higher and tin was 2 cents per pound above the low mark. Judging by the bonuses paid to metal house employees, the year was a satisfactory one from standpoint of profits.

The best prospects among the metals are in copper. The price concessions of the previous week, which brought the domestic price down to 13¾ cents, were not duplicated the past week. All sellers were holding firm to 14 cents per pound, with the principal producers pegged at 14½ cents. During the past year the big copper producers have used restraint in output, but the ambition of some operators may result in too great a production this year. On the other hand, domestic consumption of copper should be large this year, for the reason that 1927 was an off year. Copper statistics for December have not yet been compiled. Probably the surplus will be but little changed.

### Tin Market Is Quiet.

The tin market has been devoid of the spectacular features which usually characterize it. It is said that tin and shellac are the most highly speculative commodities, but the movement in tin during the past few weeks has been as mild as a lamb. At the middle of the week the metal found new low levels for the movement, prices getting into the 57's, instead of the 58's, cents per pound. December statistics, though not announced officially, were probably the least favorable of the year, it being believed that the world's visible supply increased 2000 tons or more, with shipments to this country from the Straits Settlements about 3000 tons larger than normal.

The zinc industry continues in the doldrums at the moment, though the improvement in the steel outlook is helping the tone of the coating metal. The price of ore dropped another \$1 per ton in the tri-State district to \$35 per ton, which coincides with the previous low water mark of the year.

Lead has been assuming its normal role as the steadiest of the metals. Prices have not varied over the past several weeks. The American Smelting and Refining Company holds its price to 6.50 cents per pound, New York, while the average quotation at East St. Louis is 6.32½ cents per pound. Producers have sold their January output, but if improvement in purchasing for February does not come about in 10 days the producers will begin to get concerned.

## RAILROADS

### Railroads Make Record in Operating Efficiency in 1927.

In its review of the year 1927 the American Railway Association says:

"By adequate, expeditious and dependable service the railroads have made a contribution to the industries of this country in 1927 amounting to hundreds of millions of dollars. This contribution has taken the form of savings to manufacturers and distributors, as the result of smaller inventories, quicker turnovers and a generally increased freedom of credit, all of which have effected economies in the several processes of production and distribution.

"The year has seen a new high record in operating efficiency. The outstanding operating records follow:

"1. Condition of both freight cars and locomotives best ever reported.

"2. Fewer trains and locomotives, in proportion to the amount of traffic carried, were required than ever before.

"3. The average load per train, including freight and equipment but excluding locomotive and tender, was the highest ever reported, having been 3 per cent greater in the first 10 months than in the same period of 1926.

"4. The average daily movement per freight car was the highest ever attained, having amounted to 34.7 miles in October. For the first 10 months the average was 30.7 miles, also a record for any similar period.

"5. Freight trains were moved faster over a complete journey than ever before, the average speed between terminals having been 12.3 miles per hour.

"6. Due to improvements in locomotives as well as the increase in their tractive power, together with the increase in the capacity of freight cars, the average load per train and the distance carried per train-hour exceeded all previous records.

"7. Freight traffic in 1927 was handled with the greatest conservation of fuel ever reported, coal consumption per thousand gross ton-miles having been 129 pounds.

"8. Coal consumption per passenger train car-mile was the lowest ever reported.

"9. Most intensive use of passenger locomotives on record.

"The continued improvement in operating efficiency that has been in progress for some years is largely the cumulative result of large capital expenditures which in the past eight years have amounted to approximately \$5,750,000,000. Through these expenditures more adequate transportation has been provided while they have also made possible increased economy and efficiency in operation that would not otherwise have been the case. Of the total approximately \$750,000,000 represent capital expenditures made in 1927, compared with \$875,000,000 in 1926.

"The net railway operating income of the Class 1 railroads in 1927 was approximately \$1,115,000,000, or a return of 4.50 per cent on their property investment. In 1926 it amounted to \$1,231,000,000, or a return of 5.13 per cent. This estimate is based on complete reports for the first 10 months this year which showed a net railway operating income of \$942,102,322, and which was at the annual rate of return of 4.64 per cent on their property investment, and an estimate made by the Bureau of Railway Economics as to earnings in November and December."

### Car Loadings Continue Large.

Loading of revenue freight during the week ended December 17 totaled 868,162 cars, according to reports filed by the railroads with the Car Service Division of the American Railway Association. This was a decrease of 9438 cars below the preceding week this year, reductions being reported in the loading of merchandise and less than carload lot freight, miscellaneous freight and forest products. Increases

over the week before, however, were reported in the loading of grain and grain products, livestock, coal, coke and ore. Since January 1 last there have been loaded with revenue freight a total of 50,946,044 cars, which compares with 52,338,058 cars loaded in the corresponding period of 1926 and with 50,523,091 cars loaded in the same period of 1925. It is expected that for the entire year of 1927 loadings will average over 1,000,000 cars a week.

### Mundy's Book on Railroad Earnings.

"Mundy's Earning Power of Railroads: 1927" is the 22d issue of this manual which is published annually by Jas. H. Oliphant & Co., bankers, New York and Chicago. It is compiled and edited by Floyd W. Mundy of that firm and covers the subjects of stocks, funded debt, mileage, revenues, expenses, maintenance, rentals, guarantees, dividends, investments, affiliations, valuations, etc.

### What A. P. Thom Said About the St. Louis and O'Fallon Valuation Case.

In the issue of the MANUFACTURERS RECORD of December 22, Alfred P. Thom, general counsel of the Association of Railway Executives, Washington, D. C., was reported as saying that in the celebrated case of the St. Louis and O'Fallon Railroad the special court did not approve the methods of valuation pursued by the Interstate Commerce Commission, but only decided as to the amount of the valuation of the St. Louis and O'Fallon Line, etc.

Concerning this Mr. Thom writes: "The quotation you give from me is not entirely accurate. I do not understand that the court decided anything as to the amount of valuation of the O'Fallon property. It merely said that, taking the valuation of that property as claimed by the O'Fallon Company itself, the amount of return, even on that valuation, was sufficient to constitute a fair return, leaving entirely out of view the fact that the statute of the United States, when taken in connection with the value claimed by the O'Fallon of its property, would give that company a substantially larger amount each year than the court allowed."

The quotation to which Mr. Thom refers was in a press dispatch from Washington.

### Missouri-Kansas-Texas Extension Plan.

Austin, Texas, December 30—[Special.]—Application will be made soon to the Interstate Commerce Commission by the Missouri-Kansas-Texas Railroad for a permit to construct an extension of its line from San Antonio south to a point on the Rio Grande, probably to Roma, approximately 200 miles, according to G. T. Atkins, vice-president and traffic manager. "The delay in carrying out this project was due to the merger plans which embraced the Missouri-Kansas-Texas, the Kansas City Southern and the St. Louis and Southwestern, but with the refusal of the Interstate Commerce Commission to sanction that proposed combination, the extension of the Missouri-Kansas-Texas will now be carried out as soon as possible.

The survey for the proposed road has been made from San Antonio to Hebronville, 150 miles, and officially approved. At Hebronville the line would intersect the Texas-Mexican Railroad which runs between Laredo and Corpus Christi. The Missouri Pacific plans to extend its Lower Rio Grande Valley line from Rio Grande City to Roma, 18 miles, during the coming year.

The building of these extensions would give San Antonio and a large scope of Texas a short and direct railroad connection with all points in the rapidly developing valley territory.



## GOOD ROADS AND STREETS

### Missouri Awards Contracts for 35 Miles Roads.

Jefferson City, Mo.—Contracts have been awarded by the Missouri State Highway Commission for 12 road projects embracing a total of approximately 35 miles and including three projects covering about 13 miles, for which contracts have only been tentatively awarded. Of the awards, six projects cover a total of 14.26 miles of gravel roads and three a total of 7.65 miles of graded earth construction, while the tentative awards are also for graded earth work. Contracts have also been awarded for reflooring a bridge connecting Cole and Osage counties; for 13.97 miles of guard fence in Boone, Callaway and Montgomery counties, and for 8.45 miles of guard fence in Franklin and Crawford counties, together with a section of graded earth road in Barry county and repair work on a section of road in Clay county.

### Louisville Asks Bids on Road Construction.

Baton Rouge, La.—Proposals will be received until January 12 for three road projects covering a total of approximately 15 miles, two of which will embrace a total of 12.86 miles of gravel—one covering 7.02 miles in Sabine parish and the other 5.84 miles in Rapides parish. Another project will cover 2.36 miles in St. Tammany parish, on which alternate bids are asked on concrete pavement and for Warrenite-Bitulithic, shell asphalt, sand stone rock asphalt, cold mixed limestone rock asphalt or brick wearing surfaces on concrete base. Bids will be opened January 3 for 1.57 miles of streets in Westwego, Jefferson parish, to consist of a concrete base, with either bituminous concrete, shell asphalt, cold mixed limestone asphalt, Warrenite-Bitulithic, or sheet asphalt wearing surface or a concrete pavement.

### To Expend \$12,500,000 for Streets and Sewers.

St. Louis, Mo.—According to a statement by W. W. Horner, chief engineer in the streets and sewers department of the city, a total of 1,500,000 square yards of streets will be laid in 1928 at a cost of \$7,500,000, while a construction program to cover sewers will involve an expenditure of \$5,000,000. The latter will include the eastern Rock Branch sewer which drains north-central St. Louis and will cost \$525,000; the River Des Peres sewer to drain Forest Park to cost several millions of dollars, and unfinished sewer work from this year.

### Florida Asks Bids on 25 Miles Roads.

Tallahassee, Fla.—Sealed proposals will be received until January 10 by the State Road Department, Tallahassee, Fla., for the construction of three road projects covering a total of 25.81 miles. Work on two of the projects, embracing 16.41 miles, will consist of clearing, grubbing, grading and drainage structures, while work on the other, of 9.4 miles, will consist of the application of surface treatment to the base. Plans and specifications may be obtained from the office of the department.

### Alabama Road Contracts Approximate \$1,000,000.

Montgomery, Ala.—Eleven road and bridge contracts have been awarded by the State Highway Commission for work located principally in South and West Alabama to cost nearly \$1,000,000. Six projects call for a total of 70.79 miles of grade and drainage construction, one for 16.62 miles of sand-clay roads and two for 15.02 miles of chert surfacing. There will also be a number of bridges.

### Texas County Votes \$650,000 Road Bonds.

Childress, Texas.—A road bond issue of \$650,000 has been voted by Childress county for road building, which will be supplemented by \$1,300,000 of State and Federal aid already pledged. Two cross-county highways are included in the improvement program.

### \$500,000 Georgia Bridge Contract Let.

Jesup, Ga.—Contracts have been awarded by the State Highway Commission, Atlanta, for the Doctortown bridge here, estimated to cost \$500,000 completed. F. M. Jones of Savannah received contract for the bridge, at \$225,000, and T. P. Sweet, Miami, Fla., at \$75,000, for dredging. Work to be done by the counties is estimated to cost \$125,000.

### Hidalgo County Sells \$3,900,000 Road Bonds.

Edinburg, Texas.—Bonds in the amount of \$3,900,000 of Hidalgo county road district No. 1 have been sold to the Brown-Crummer Company of Wichita, Kan., at par, accrued interest and a premium of \$10,120. It is understood that construction of roads under the bond issue improvement program will soon be started.

### Georgia Road and Bridge Contracts Exceed \$3,000,000.

Atlanta, Ga.—Contracts have been awarded by the Georgia Highway Commission for road and bridge construction to cost in excess of \$3,000,000. This is said to be the largest award ever made by the commission at one letting. The work will cover about 20 projects in as many counties.

### Tennessee Asks Bids on 13 Miles.

Nashville, Tenn.—Bids will be received until January 18 by the State Department of Highways and Public Works, C. N. Bass, commissioner, for the construction of two road projects in Hamilton county, embracing 13.39 miles. One consists of 6.70 miles between Silverdale and Bradley county line and the other of 6.64 miles between South Chickamauga Creek and Silverdale. Grading and draining has been completed on both projects.

### Asks \$18,000,000 for Military Highway in Texas.

San Benito, Texas.—Following the receipt of information that Representative Claude Hudspeth of El Paso had introduced a bill in Congress calling for an appropriation of \$18,000,000 for a military highway from Brownsville, Texas, to the Pacific Ocean, J. E. Bell, president of the South Texas Secretaries' Association, announces that he has requested a large number of business people and South Texas Chambers of Commerce to urge their Congressmen to support the bill. The measure calls for a paved highway to parallel the Rio Grande River, 16 feet wide, the counties through which it will pass to furnish a right of way, and provision made for condemning private property.

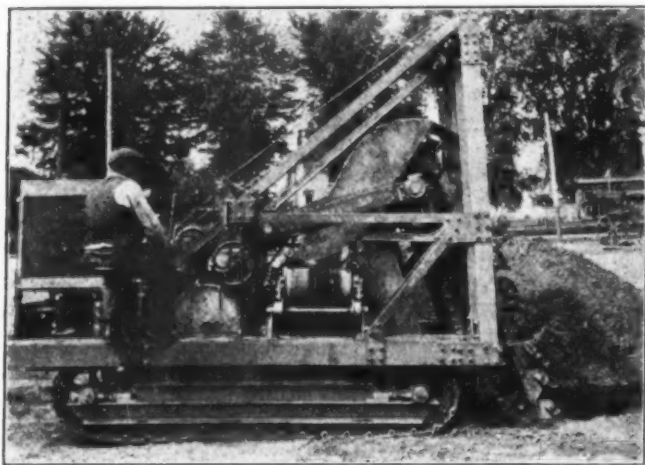
Before the announcement that a bill had been introduced, the Cameron County Court at Brownsville had already begun to make preparations for paving a portion of the military highway from funds of a \$6,000,000 bond issue recently voted, and the San Benito precinct road committee had requested a road to connect San Benito directly with the military highway. Members of this committee include J. B. Symonds, E. H. Downs, James C. Bowie and W. E. Anderson.

## NEW AND IMPROVED EQUIPMENT

### A New Small Service Ditcher.

In response to the increasing need for smaller portable units of power-driven, labor-saving equipment, the Model 150 Service Ditcher has been added to the very complete line of chain-and-bucket trench excavators, built by the Buckeye Traction Ditcher Company of Findlay, Ohio.

This newest Buckeye is a little, lightweight ditcher, exceptionally flexible in performance. Proportionately, it has the rugged construction and economical working ability of the



THE NEW DITCHER IN OPERATION.

larger, more powerful excavators of this make, but it has many distinctive features which particularly adapt it to service line excavation and for operation in restricted quarters where big excavators are unsuitable. It has been thoroughly tested in all sorts of soils and under all conditions.

A pretty good idea of the new machine may be had from this general description: Cutting widths, 16, 18, 20, 22, 24 and 26 inches; cutting depths, 0 to 4, 6 and 8 feet. Overall dimensions: Width 6 feet 6 inches; height (with boom raised for travel), 10 feet; length (set for 8-foot cut and boom raised), 21 feet 8 inches; length (with boom at maximum digging depth), 18 feet; front of machine to rear of Alligator wheels, 12 feet; approximate weight, 18,000 pounds; 98 per cent steel construction, excluding power unit; one-man

operation, all the control levers being within his easy reach.

The main frame consists of 4 longitudinal sills of 7-inch—12.25-pound channel, 12 feet  $\frac{1}{2}$  inch long by 32 inches and 6 feet 6 inches back to back, respectively, adequately braced with sturdy cross members. The entire assembly is rigidly reinforced and it is mounted on two full-length Alligator (crawler type traction) wheels, with electric steel treads, heat-treated. Steering is by two Twin Disc friction clutches, each equipped with a band brake that automatically sets when clutch is released. The machine may be turned completely around in its own length. The excavator boom is of box girder construction and is extremely rugged. Buckets are one-piece electric cast steel, annealed and self-cleaning.

Standard cutting speeds are 12.8 inches, 18.1 inches, 35.7 inches and 66.4 inches per minute. Other gears can be furnished to provide four higher or lower speeds. The motor is of the heavy-duty tractor type, developing 52 horsepower at 900 revolutions per minute.

A unique feature of the machine is its reverse digging traction which enables it to dig while traveling backward. That permits tunneling under sidewalks or other obstructions, or removing spoil where trenches have caved. It can dig straight down beside a wall or building.

One of these ditchers will be exhibited at the Road Show in Cleveland.

### Concrete Mixed on Trucks En-Route.

One of the most recent developments in motor trucking is that of mixing cement while the truck is going to its destination. The dry mix is quickly dumped from bunkers into the mixer at a central location and while en route, water is added and the cement thoroughly mixed, so that when the truck reaches its destination, the concrete is ready to be poured. By use of this equipment the concrete company saves its customers the cost and expense of maintaining concrete mixing units, and eliminates the blocking of sidewalks and streets with piles of rock and sand.

The Heil hoist, made by the Heil Company of Milwaukee, Wis., was chosen by the Blue Diamond Company of Los Angeles, Cal., because it best covers their requirements. It has a two-year guarantee and the expense incurred in its upkeep is almost nothing. There are only two wearing parts and these operate in a bath of oil. The hoist is very fast, as it will lift a load to the full dumping capacity in less than one-quarter of a minute. Other features are simplicity of mechanism and operation, it has twin cylinders, and it applies its lifting effort in a straight line to the load itself at all angles of the dumping operation, thus assuring great power. As the mixers weigh 4500 pounds and are higher than the ordinary body, the center of gravity had to be made lower. As a Heil hoist could do this, it was chosen. The Blue Diamond Company also specified that the body should not extend above the truck cab, and this has been taken care of through the use of this hoist.

These hoists are installed on AXX Special Moreland trucks which, by a special power hook-up from the transmission, operate the Barrymore concrete mixers mounted on them. Great economies are claimed for this new development.



MORELAND TRUCK, HEIL HOIST AND BARRYMORE MIXER.



### Industrial Tractor for Road Work.

The Industrial Tractor is finding another field of usefulness in road work. The accompanying picture shows one of them at work at Sussex, Wis., this machine being built by the J. I. Case Threshing Machine Co. of Racine, Wis.

The road on which this outfit worked was an old, well-worn and extremely hard, water-bound macadam on which



TRACTOR WORKING ON MACADAM ROAD.

it did an excellent job of scarifying and maintaining. The tractor developed abundance of power to do the work satisfactorily.

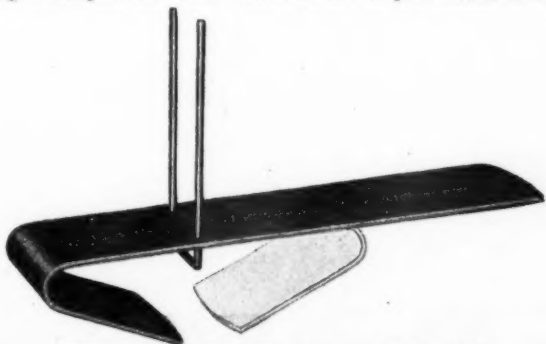
This outfit is a one-man rig, as the operator handles both the tractor and the grader from his comfortable seat on the tractor. One man can also do scarifying alone with it. All controls are within easy reach and the driver is away from the dust and dirt with a clear view ahead. The tractor pulls the load. It can be detached from the grader quickly and be used for other useful work.

A feature which appeals to construction and maintenance men is that the outfit can be turned completely around in the tractor's turning radius. The tractor is built throughout to stand up to the hard work of road maintenance and construction. All working mechanisms are fully protected from dust and dirt by being enclosed in housings.

### Improved Rib Metal Lath Clip.

Application has been made for a patent on a new metal lath clip recently developed by the engineers of the Milwaukee Corrugating Company, Milwaukee, Wis. This clip is designed to secure the Milcor Stay-Rib Metal Lath to flanged structural supporting and framing members such as I-beams.

The clip is made in two parts: a flat metal strap and a strong U-shaped tie-wire. The metal strap is made of No. 16



LATH CLIP AND TIE WIRE ASSEMBLED.

gauge, .1-inch band iron and is hook-shaped at one end, being designed to slip over one flange of an I-beam or any other type of flanged supporting member. The other end of the strap is straight and remains so until the clip is placed in position; then this end is hammered or clinched around the opposite flange of the beam. This makes the strap adjustable to any size of flanged metal lumber.

The U-shaped tie-wire is made of No. 12 gauge steel wire,

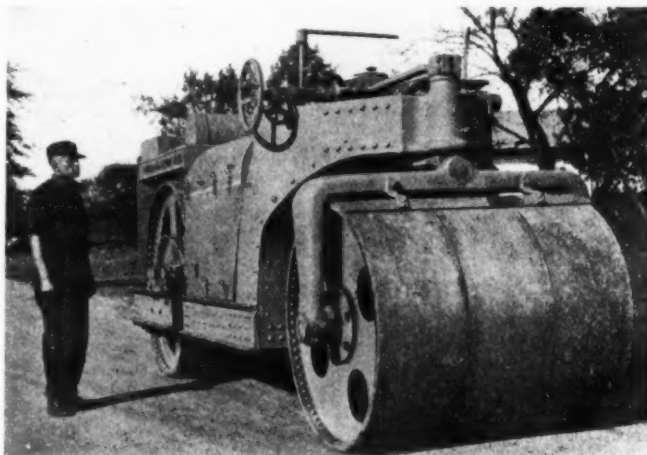
and when the clip is assembled, the two legs project up 2½ inches, at right angles, through holes punched in the strap for this purpose. When the lath is applied the two legs of the tie-wire extend up through the lath, straddling the rib, and are clinched or twisted tightly on the upper side; thus they hold the lath securely.

The position of the strap may be adjusted along the flange after the lath has been laid; this makes it possible to fit the wire legs so that they project through the lath without distorting the lath or the clip.

By constructing this device of a separate strap and tie-wire, the problem of manufacture is simplified and the expense of shipment greatly reduced. The straps and tie-wires are very easy to assemble on the job and can be packed separately when shipped from the factory. This method of packing takes up less space than the assembled product and saves shipping charges.

### Ten-Ton Motor Tandem Roller.

Because of a definite demand for more compression on asphalt surfaces by road builders and also for the motor tandem roller instead of the steam roller, the Gallion Iron Works and Manufacturing Company of Galion, Ohio, have brought out a 10-ton heavy-duty tandem motor roller, which is shown



THE HEAVY-DUTY ROLLER ON THE ROAD.

in the accompanying picture. This new step is in line with the company's policy of meeting the needs of road building and maintenance workers as they arise and this particular demand is fully met by this large 10-ton machine, which has a three-section steering roll.

The machine is powered by a Hercules Model G motor. The power steering is operated by the same motor and a special transmission designed and produced in the Gallion plant meets the special requirements of tandem service on asphalt. The important considerations in this work are: Smooth operation, always and quick, positive reversing, as jerky operation or allowing the roller to stand still more than an instant will result in an uneven asphalt surface. Reversing instantly and smoothly without gear shift, the operation of this tandem is very quick and smooth. Thorough tests on asphalt work under the strictest requirements have shown that this tandem roller fully meets every condition.

In their line of motor tandems of which the 10-ton heavy-duty tandem is the latest, the Gallion works claim to have attained fully all the advantages of the steam tandem without the disadvantages of supplying fuel, frequent firing and smoke annoyance. There are new 10, 9, 8, 7, 6 and 5 ton sizes. The line also includes steam tandems in the same sizes.

The roller illustrated is being used by the Trinidad Paving Company of Cleveland, Ohio, for work on Clair avenue, in Maple Heights, a suburb of that city.

# CONSTRUCTION DEPARTMENT

## EXPLANATORY

Additional information is published about all enterprises mentioned in this department as soon as such data can be obtained.

The date at the end of an item indicates issue of the Manufacturers Record in which earlier facts about the same enterprise were published.

## DAILY BULLETIN

The Daily Bulletin is published every business day to enable its subscribers to follow up promptly the industrial, commercial, railroad, financial, building and general business development of the South and Southwest. To machinery manufacturers and dealers, contractors, engineers and others who require daily information of every new enterprise organized and details about important additions to enterprises already established, the Daily Bulletin is invaluable. Subscription price, \$30.00 a year.

### Airports, Airplane Plants, Etc.

Ga., Augusta—W. W. Jones, 115 Seventh St., Augusta, reported, has contract for construction of memorial entrance gates for Daniel Aviation Field; Scroggs & Ewing, Archts., Southern Finance Bldg. 12-29

La., Monroe—Ouachita Parish Police Jury, Theo. F. Terzia, Pres., plans receiving new bids for construction of airplane hangar at Seilman Field, old bids rejected. 12-8

Okla., Pawhuska—City Comm. leased site and plans erecting hangar for municipal airport.

Tenn., Clarksville—Howard L. Savage and associates interested in proposed municipal airport.

Tex., Brownsville—R. B. Creager, W. B. Clint, members of committee to secure options on site for proposed airport; reported, contemplates \$100,000 bond issue.

Va., Sandston—Col. A. A. Anderson, New York City, and associates, reported, interested in establishing airplane factory, acquired 1300 acres land near Sandston which constitutes the Richmond air junction.

W. Va., Glendale—R. R. Kitchen & Co., 37 19th St., Wheeling, reported, has contract to erect plant for the Fokker Aircraft Corp. of America; C. W. Bates, Archt., 77 12th St., Wheeling. 12-1

### Bridges, Culverts and Viaducts

#### Proposed Construction

Ala., Birmingham—See Roads, Streets, Paving.

Ala., Mobile—Mobile County Board of Revenue and Road Commrs., Arthur D. Davis, Pres., considering highway bridge across Three Mile Creek.

Ark., Bentonville—Benton County Quorum Court, W. R. Edwards, Judge, reported, plans receiving bids for 7 reinforced concrete and steel bridges: Over White River, Bentonville-Eureka Springs road near Best; Perry-Alden Dam Bridge over Osage River; Deep Ford Bridge over Osage River near Logan; Fairview Schoolhouse Bridge over Osage River near Dixieland Place; Alden Farm Bridge over Spavinaw Creek, 5 mi. south of Gravette; Spavinaw Creek Bridge, 2 mi. south of Gravette; Court Hart Place Bridge over Osage River south of Bentonville; cost \$35,000.

Ark., Marion—State Highway Comm., Dwight H. Blackwood, Chmn., Little Rock, may widen concrete bridge sections of Hara-han Viaduct, 20 to 40 ft., Crittenden County; C. S. Christian, State Highway Engr.

Fla., Miami—City Comm., John C. Knight, Commr., plans 900-ft. bridge including approaches, 60-ft. wide, over Miami River at S. W. First St.; 19-ft. clearance at high tide; John W. Watson, Jr., City Atty.

La., DeRidder—See Roads, Streets, Paving.

La., Lake Charles—War Dept., Washington, D. C., approved plans Louisiana Highway Comm., Frank T. Payne, Chmn., Baton Rouge, for temporary bridge over Calcasieu River below Lake Charles. 11-4

La., Melville—War Dept., Washington, D. C., reported, approved plans of Texas & Pacific Rwy. Co., E. F. Mitchell, Ch. Engr., Dallas, Tex., to reconstruct bridge over Atchafalaya River at Melville; contract let to Mississippi Valley Bridge and Iron Co., Leavenworth, Kan. 12-1

La., St. Joseph—Tensas Parish Police Jury, E. F. Newell, Clk., receives bids Jan. 24 for 2 bridges: Bridge at Newton Ferry; wooden bridge on creosoted piling, cypress lumber, oak decking flooring; plans on file.

Md., Baltimore—City, Wm. F. Broening,

Mayor; Baltimore & Ohio R. R., H. A. Lane, Ch. Engr., and Western Maryland R. R., H. R. Pratt, Ch. Engr., plan building Hanover Street Viaduct early in spring; first contracts will be let for excavation; plan raising grade of several cross streets as they approach Hanover St.; long earth fill at each end of viaduct with open spans over lines of railroad tracks; Nathan L. Smith, Highways Engr.; C. F. Goob, Ch. Engr. 2-3-1927

Miss., Vicksburg—War Dept., Washington, D. C., approved revised plans of Vicksburg Bridge and Terminal Co., Little Rock, Harry E. Bovay, Pres., 1743 N. Parkway, Memphis, Tenn., for bridge over Mississippi River at Vicksburg.

Missouri—State Highway Dept., Jefferson City, reported, plans building bridges in 13 counties: Bates, Callaway, Cape Girardeau, Cass, Cole, Gentry, Holt, Howard, Lincoln, Nodaway, Phelps, St. Charles and Warren Counties; steel truss, reinforced concrete deck girder and I-beam spans; T. H. Cutler, State Highway Engr.

Mo., Chesterfield—St. Louis County Court, reported, granted permit to E. M. Elliott and associates, Inc., 360 North Michigan Ave., Chicago, Ill., to build bridge across Missouri River, near Chesterfield, connecting highways of St. Louis and St. Charles Counties.

N. C., Winston-Salem—Norfolk and Western Ry. Co., W. P. Wiltsee, Ch. Engr., Roanoke, Va., plans 275-ft. bridge on Walker road, between State Highway to Walkertown and Mineral Springs School; cost about \$60,000; eliminate grade crossing.

Okla., Allen—State Highway Dept., Oklahoma City, reported, plans I-span, 96-ft. steel truss bridge on piers over Steep Creek on Road 12, Pontotoc County near Allen, cost \$35,000; Clark R. Mandigo, State Highway Engr.

Okla., Ponca City—City, H. C. Mulroy, Mayor, plans Santa Fe Ry. underpass at South Ave.; two 18-ft. roadways, each one-way drive; concrete center supports; approximate cost \$200,000. See Financial News—Bond Issues Proposed. 12-1

Tennessee—Dept. of Highways and Public Works receives bids for 6 bridges. See Roads, Streets, Paving.

Texas—State Highway Comm., R. S. Sterling, Chmn., Austin, receives bids Jan. 17 for 2 bridges: Washington and Waller Counties—238 mi. bridge, State Highway No. 20; 320-ft. and two 126-ft. steel spans on concrete piers, two 342.5-ft. timber trestle approaches, 20-ft. roadway; Unit 1, superstructure and timber approach trestles, 43,590 lb. reinforcing steel (truss floors), 980,000 lb. structural steel; Unit 2, substructure piers 1 and 4, and 2 and 3, 15,800 lin. ft. untreated timber piling (piers 2 and 3), 1792 lin. ft. precast, 18-in. square, concrete piling, (piers 1 and 4), 90,000 lbs. structural steel, 44,650 lbs. reinforcing steel; Mitchell County—.004 mi. bridge on State Highway No. 1, three 43-ft. and thirteen 28.5-ft. concrete girder, 20-ft. roadway; 1127 cu. yd. excavation, 158,232 lbs. reinforcing steel; plans on file; R. A. Thompson, State Highway Engr.

Tex., Hempstead—State Highway Dept., R. S. Sterling, Chmn., Austin, receives bids Jan. 16 for high-type bridge over Brazos River, at Chappell Hill, Waller County; R. A. Thompson, State Highway Engr.

Tex., Wharton—State Highway Comm., R. S. Sterling, Chmn., Austin, receives bids Jan. 17 for 2523-ft. concrete pile bridges across Peach Creek and West Bernard Creek, Wharton County; plans on file and from J. M. Nagle, Res. Engr., Wharton; E. A. Thompson, State Highway Engr.

Virginia—State Highway Comm. receives bids for 2 bridges. See Construction News—Roads, Streets, Paving.

### Contracts Awarded

Alabama—State Highway Comm. let contract for several bridges. See Roads, Streets, Paving.

Ala., Mobile—Mobile County, J. B. Converse, County Engr., let contract to E. P. Toulmin, Toulminville, Ala., for 75-ft. concrete bridge over Southern Ry. main line; paved approach.

Georgia—State Highway Board let contracts for 7 bridges. See Roads, Streets, Paving.

Georgia—State Highway Board let contracts for 6 bridges. See Roads, Streets, Paving.

Ga., Jesup—State Highway Comm., John N. Holder, Chmn., Atlanta, let contract to F. M. Jones, 2501 Habersham St., Savannah, at \$225,000 for bridge over Altamaha River, at Doctortown; T. P. Sweet, Miami, at \$75,000 for dredging work; D. C. Newton, Waycross, Div. Engr. 12-15

Md., Baltimore—City, Board of Awards, let contract to Harry T. Campbell Sons Co., Pennsylvania Ave., Towson, at \$22,785, for 51-ft. concrete arch bridge over Herring Run at Mannasota Ave. 12-15

Miss., McComb—Board of Mayor and Councilmen let contract to Merrell Construction Co. to pave approach to overhead bridge in East McComb.

Tex., Abilene—Taylor County Commrs. Court let contract to Austin Bridge Co., 1813 Clarence St., Dallas, for 3 steel bridges on lateral roads: 2 in Abilene Precinct; 1 in Merkel Dist.

Tex., Houston—See Roads, Streets, Paving.

Va., Norfolk—Carnegie Steel Co., Carnegie Bldg., Pittsburgh, reported, has contract, through Turner Construction Co., 420 E. Lexington St., Baltimore, contractor, for 5000 tons 30-in. I-beams for trestle work of James River Bridge between Norfolk and Newport News, Va., to be built by James River Bridge Co. 12-15

### Canning and Packing Plants

Fla., Homestead—W. W. Campbell, reported, interested in establishment of canning plant.

Tex., Marshall—Chamber of Commerce, reported, interested in establishing pickle plant.

Tex., Troup—I. E. Tackett and Chamber of Commerce, reported, interested in erection of canning plant.

### Clayworking Plants

Miss., Yazoo City—Yazoo Brick Co., C. E. Mann, Pres., will begin construction about Jan. 15 on brick plant, to manufacture common and face stiff mud brick; will put in brick machinery built by J. C. Street & Sons, Statesville; will use open sheds and up-draft kilns; will have daily capacity of about 45,000 brick; labor and material already arranged for.

Tex., Wichita Falls—Acme Brick Co., N. P. Anderson Bldg., Fort Worth, reported, expend \$100,000 on improvements at Wichita Brick and Tile Co.'s plant.

### Coal Mines and Coke Ovens

Tenn., Chattanooga—Cash Coal Co., incorporated; H. L. Gray, East Missionary Ridge; John E. Patton, 131 Cowart St.; A. T. Stewart.

W. Va., Clarksburg—Sardis Coal Co., reported, leased 22 acres coal land near present holdings, Isaac's Creek, Sardis and Eagle districts.



### Concrete and Cement Plants

N. C. New Bern—Carolina Cement Co., J. A. Acker, Pres., Port Huron, Mich., reported, incorporated under laws of Delaware for establishment of cement plant on Trent River, costing about \$3,000,000; engineers now surveying land; first installation will consist of 2 units with buildings sufficient to house 2 additional units; initial capacity about 1,500,000 bbls. cement annually; plant will probably be ready for operation by September, 1928; other officers of company are F. R. Patterson, V.-Pres.; R. O. Clark, Sec.-Treas. 3-31

### Cotton Compress and Gins

Ark., Jonesboro—Burton and Ballew, reported, has contract to rebuild burned portion of Jonesboro Compress. 12-22

Tex., Dickens—The Peoples Gin, O. L. Hale, Sec., will rebuild burned gin.

Tex., Galveston—Island Cotton Co., reported, acquired Zethraeus Re-Gin Plant, 4221 Ave. M; will improve and operate; will add 6 more gin stands, install additional press, etc.

Tex., Houston—Houston Compress Co. increased capital, \$3,000,000 to \$4,200,000.

### Drainage, Dredging and Irrigation

Fla., Sanford—Everglades Drainage Dist. Comms., Tallahassee, reported, approved proposed \$80,000 bond issue by Slavin Drainage Dist., Seminole County; issue used for reclamation of about 4400 acres for cultivation.

Tex., Laredo—Everett Love, reported, has permit to construct dam on Salado Creek, tributary to Rio Grande, Zapata County, to impound sufficient water to irrigate 1274 acres annually.

Tex., Richmond—Richmond Irrigation Co., capital \$91,500, incorporated; Wm. S. Lehrer, Wm. K. Lehrer.

### Electric Light and Power

Electric light and power work in connection with many LAND DEVELOPMENT operations involves the expenditure of large sums of money. See that classification for details.

Ark., West Memphis—Wilson Power and Light Co., Wilson, reported, plans construction of steam operated electric powerhouse and ice manufacturing plant.

Fla., Miami Beach, Br. Miami—City, Claude A. Renshaw, Mgr., reported, install white way lighting in Collins Ave. from Twenty-third to Thirtieth St.

Georgia—W. B. Foshay Co., Minneapolis, Minn., reported, acquired for Public Utilities Consolidated Corporation of Arizona, control of Baker County Co., owning and supplying electric properties in 15 communities, including hydro-electric generating plant. W. B. Foshay Co. wires that company will be operated as Baker County Power Co., a subsidiary of Public Utilities Consolidated Corp.; vice-president of Foshay Co. in charge of utilities now on ground and cannot announce program for improvements until survey is completed.

Ga., Brunswick—Mutual Light and Water Co., reported, install white way Gloucester St. from Newcastle to Union.

Ga., Helena—Georgia Power Co., Atlanta, L. K. Starr, Mgr. Public Relations Dept., advises regarding purchase of electrical distribution system, ice and cold storage plants at McRae and rehabilitation of local distribution system at Helena; electrical distribution system, ice and cold storage plants at McRae were purchased during the latter part of Nov. and operation was taken over Dec. 5; extension of 44,000-volt high-tension line has been authorized to McRae, and probably will be completed within next 4 months; planned to continue operation of present oil-engine generating plant, which was operated by city of McRae until such time as new transmission line can be completed; following completion of line McRae will be served by hydro-electric power; new transformer station will also be built at McRae, which will reduce the voltage to 2300 volts for local distribution; distribution system of McRae was purchased in 1926 and has been completely rehabilitated; upon completion of transmission line to McRae, Helena also will be served with hydro-electric power, only transformer station at McRae being required for both towns.

La., Minden—Texas-Louisiana Power Co. of Fort Worth, A. P. Barrett, Pres., reported, negotiating for light, power and water facilities.

Miss., Waynesboro—City, reported, having estimates prepared by Hugh Ogden of Electric Appliance Co., New Orleans, La., for white way system.

Missouri—W. S. Merkle, Const. Engr., 414 N. 12th Blvd., St. Louis, is developing hydro-electric project in South Central Missouri; will produce 125,000,000 kwh. yearly.

Missouri—Towns of Meta, Argyle and Freeburg have each granted 20 yr. franchise to W. S. Merkle, Const. Engr., 414 N. 12th Blvd., St. Louis, and associates; have completed plans and estimates; plans include local distribution system in each town and about 50 miles of light transmission lines to connect these three towns and number of smaller ones into one group, to be operated as one unit; transmission is planned for 3 phase, 3 wire, 13,200 volt with local distribution of 2300 to 110 volt.

Mo., Campbell—City, reported, receives bids Jan. 10 for 1-story electric light and power plant; cost \$50,000; A. C. Moore, Engr., Joplin National Bank Bldg., Joplin. 12-15

Mo., Rockport—Rockport Light and Power Co. Incorporated; O. W. Clifton, Jesse Clifton.

N. C., Asheville—Carolina Power and Light Co., Raleigh, reported, expend \$200,000 for improvements and extension during 1928.

N. C., Greensboro—North Carolina Public Service Co., Charlotte, reported, install white way lights on Forbes and Washington Sts.

Okla., Harrah—Mississippi Valley Steel Co., reported, has contract for 700 tons steel for power plant for Byllesby Engineering and Management Corp., 231 S. LaSalle St., Chicago, Ill. Company wires: "Contracts have been awarded for construction of additional 30,000 kw. unit at Harrah, but full details not available here."

Okla., Muskogee—City, A. F. McGarr, Mgr., reported, plans installing \$50,000 white way system.

Okla., Tulsa—See Miscellaneous Enterprises.

Tenn., Knoxville—Knoxville Power and Light Co., Col. C. H. Harvey, Pres., reported, expend \$1,500,000 for expansion and development program in 1928.

Texas—Gulf States Utilities Co., Beaumont, J. G. Holtzclaw, Vice-Pres. and Gen. Mgr., reported, expend \$1,203,000 for improvements and expansion in 1928; including power sub-station for Beaumont, improvement of plants and power lines in Beaumont, Jasper, Port Arthur, Orange and Hull; improvement of Orange power plant; rebuilding Orange ice plant; rehabilitation of Port Arthur street lighting system; rebuilding modern ice vault in Port Arthur; increase generating capacity of Lake Charles gas plant; additional high line facilities between Beaumont and Silsbee.

Tex., Bandera—Central Power and Light Co., Frost National Bank Bldg., San Antonio, reported, install lighting system.

Tex., Brownsville—Texas Central Power Co., Frost National Bank Bldg., San Antonio, reported, erect \$40,000 plant.

Tex., Houston—Houston Lighting and Power Co., reported, started construction of 2-story substation at Peden Ave. and Dunlevy St.; cost \$30,000; concrete, steel, brick and tile construction; 28x67 ft., with 3-ply built-up roof; construction by day labor; install transformers and other equipment.

Tex., Pecos—Texas-Louisiana Power Co., Fort Worth Club Bldg., Fort Worth, erecting power plant; advises all of work in connection with this erection is being handled by the engineering department of company, and no contract has been let or will be let for this building. 12-22

Tex., Port Arthur—Eastern Texas Electric Co. (Southeast Texas unit of Stone & Webster Interests), Beaumont, reported, applied for 50 year power franchise.

### Flour, Feed and Meal Mills

Md., Hagerstown—D. A. Stickell & Sons, Inc., will rebuild burned grain storage elevator.

Mo., Fairfax—Fairfax Grain Co., capital \$11,000, incorporated; Wm. Stewart, B. B. Scholer.

Mo., Kansas City—National Milling Co., Toledo, O., a subsidiary of National Biscuit Co., reported, considering establishment of flour mill.

N. C., Durham—J. T. Rogers & Co., Inc., chartered; E. A. Rogers, L. T. Rogers.

N. C., Lincolnton—Lincoln Milling Co., capital \$15,000, incorporated; B. J. Ramsaur, Jno. W. Daniel.

Tenn., Memphis—General Feed Mills, incorporated; J. D. Riley, W. H. Dwyer.

### Foundry and Machine Plants

Ky., Louisville—G-N-K Furnace Co., Inc., Brook and Gaubert St., reported, acquired furnace department of O. K. Stove & Range Co.; will manufacture flue type, self-cleaning furnaces.

Miss., Biloxi—Welding, etc.—Dixie Machine

Works, Inc., capital \$10,000, chartered; John R. O'Donohoe, Pascagoula; Adam Gautier, Fernando J. Gautier, Biloxi.

Mo., St. Louis—Foundry Equipment, etc.—Reeder & Richter Pattern Co., capital \$10,000, incorporated; C. H. Reeder, 1026 Fairmount St., Jean Reeder, Mrs. Minnie Richter, 3442 Utah St.

N. C., Charlotte—The E. H. Jacobs Manufacturing Co., W. Palmer St., main office Danielson, Conn., reported, plans taking over additional floor space in Bostic Bldg., double manufacturing operations and distribution of textile loom necessities.

### Gas and Oil Enterprises

Arkansas—Memph's Power & Light Co., Memphis, Tenn., wires regarding report that company and American Bond and Share Co., New York, are negotiating for franchises in Arkansas cities between Memphis and Louisiana gas fields: "No definite commitments on the part of anybody so far as we know to build pipe line referred to, though considerable newspaper speculation regarding natural gas being piped to St. Louis and Memphis, based on fact that certain surveys and investigations are now under way."

Ga., Savannah—Savannah Gas Co., D. H. Levan, Asst. Mgr., reported, lay gas mains on Bull St.

Ky., Ashland—Ashland Gas Co., reported, let contract to Hope Construction Co., Mt. Vernon, for laying pipe line.

Ky., Princeton—Princeton Oil and Gas Co., capital \$30,000, incorporated; R. M. Pool, J. W. Hollowell.

La., Colfax—Southern Carbon Co., subsidiary of Columbian Carbon Co., 45 E. 42nd St., New York, reported, considering furnishing city with gas; negotiating for franchise.

La., Jennings—Salt Dome Oil Co., Inc., capital \$20,000, chartered; D. C. Ritchie, S. B. Mullen.

La., Kentwood—Kentwood Oil Drilling Co., Inc., capital \$100,000, incorporated; Benj. W. Morris, Geo. A. Kennon.

La., Lake Charles—Yount-Lee Oil Co., San Jacinto Life Bldg., Beaumont, Tex., and W. T. Burton, reported, acquired 11,000 acres gas lands.

La., Shreveport—Baca Drilling Co., Inc., capital \$20,000, incorporated; T. A. Carlton, Geo. W. Wise, 1039 Rutherford St.

Maryland—Federal Securities Corp., H. M. Byllesby & Co., Inc., both Chicago; West & Co., Philadelphia, and Thompson, Ross & Co., Chicago, are offering 25,000 shares of Central Gas and Electric Co., 209 S. La Salle St., Chicago, \$6.50 dividend series preferred stock; company, a Delaware corporation, will furnish through operating properties, public utility service in various communities of Illinois, Wisconsin, Michigan, Indiana, Pennsylvania, Maryland, Maine, New Brunswick and Florida; proceeds to be used in part for acquisition of new properties and to retire indebtedness.

Miss., Greenville—Peoples Gas and Coke Co., incorporated; Charles U. Gordon, John I. Faris; will take over and operate Greenville Gas Co.; plans improvements. 9-8

Mo., Kansas City—Eureka Petroleum Co., capital \$30,000, incorporated; Michael J. Pendergast, 403 Scarritt Arcade; Joseph L. Jacobson.

Oklahoma—Oklahoma Natural Gas Co., R. C. Sharp, Pres., 117 W. Fourth St., Tulsa, acquired all gas properties of Oklahoma Gas and Electric Co., Insurance Bldg., Oklahoma City, including distribution systems in Oklahoma City, Bethany, Britton, Yukon, Enid, Ardmore, line connecting Norman to Oklahoma Gas Co.'s pipe line, gate stations and other equipment in all of these towns.

Okla., Tulsa—Cully Co., capital \$10,000, incorporated; J. M. Duncan, Kennedy Bldg.; W. D. Allen, 1726 S. Boulder St.

Okla., Tulsa—Delilah Belle Oil Co., capital \$25,000, incorporated; F. G. Buebeck, 106 Fifth St.; Reese Cain, 1002 S. Detroit St.

Okla., Tulsa—Crude Oil Co., capital \$25,000, incorporated; F. L. Gast, 1521 S. Denver St.; F. A. Peck.

Okla., Tulsa—Gladys Belle Oil Co., Atlas Life Bldg., reported, reorganize with Harrison Green, Pres.

Tenn., Knoxville—Knoxville Gas Co., H. G. Bonner, Gen. Mgr., reported, expend \$2,000,000 for gas producing plant and extension of distribution lines.

Texas—Houston Gulf Gas Co., Odie R. Seagraves, Pres., Houston, reported, plans connecting gas fields in Laredo with Refugio line; acquired 95,000 acres land in Refugio and Laredo districts; Empire Power Co. (holding concern), also reported planning expansion program in 1928 including purchases of

gas distribution company at San Antonio, etc.

**Texas**—The Texas Co., 17 Battery Place, New York, reported, acquired West Texas holdings of Pure Oil Co., Wabash Ave. and Wacker Drive, Chicago; construction 25 mile 10-in. pipe line from Hendrick pool to Monahan; also considering constructing trunk line from McCamey to Port Arthur. 12-22

**Texas**, Coleman—Coleman Gas and Oil Co., Ira Young, Mgr., reported, purchased 3 additional carloads of 6-in. pipe for constructing welded line.

**Texas**, Corsicana—Magnolia Pipe Line Co., Dallas, reported, making plans to loop pipe line from Corsicana to Beaumont, distance of 240 miles, giving maximum capacity of 110,000 bbls. daily.

**Texas**, Galveston—City, reported, granted to Galveston Gas Corp. and Galveston Pipe Line Co., franchise for manufacturing and distributing manufactured gas, natural and mixed gas, and for operating line. 7-14

**Texas**, Ingleside—Humble Oil and Refining Co., E. A. Bynum, Jr., Supt., Houston, advises regarding work on Ingleside refinery: "We are not contracting this work; this is only a small refinery, most of the material for which is being moved from Burkburnett."

**Texas**, Jefferson—George S. Bussart, reported, interested in laying pipe line; has natural gas franchise.

**Texas**, Kyle—Southern Gas and Utilities Co., San Antonio, reported, supply city with natural gas; has franchises in Austin and San Marcos.

**Texas**, Mexia—Sinclair Pipe Line Co., Sinclair Bldg., Tulsa, Okla., reported, construct additional 8-in. pipe line from Mexia oil fields to Healdton; cost \$2,000,000; will increase capacity of main trunk line to minimum of 3000 bbls. daily.

**Texas**, Midland—Magnolia Petroleum Co., Dallas, reported, construct 8 storage tanks of 55,000-bbl. capacity.

**Texas**, Rockdale—Union Production Co. increased capital, \$50,000 to \$250,000.

**Va.**, Hopewell—Old Dominion Gas & Electric Co., 120 Broadway, New York, plans early construction of gas distribution system. Company advises: "It is our present plan to let no general contract for work, as we are all equipped to carry out all phases with our own forces; system to be built is small and requirement of materials will not be large." 12-12

**Va.**, Newport News—Newport News Oil Co., capital \$10,000, incorporated; W. M. Phillips, Newport News; W. C. Callis, Irvington; G. S. Hewitt, 1417 Avondale Ave., Richmond.

**W. Va.**, St. Marys—Dinsmoor & Co., incorporated; J. D. Dinsmoor, F. K. Sellers.

### Ice and Cold-Storage Plants

**Ark.**, Little Rock—Sheridan Ice Co., capital \$10,000, chartered; Vance M. Thompson, L. A. Phillips, W. J. Dugan.

**Fla.**, Inverness—Central Florida Light and Power Co., Dunnellon, Fla., reported, plans erecting ice plant.

**La.**, Farmersville—W. F. Moody & Co., A. O. U. Bldg., Little Rock, Ark., has contract for building and equipment for 10 ton capacity ice plant for N. L. Harman Co., Inc., Homer, La.; 30x40 ft.

**Mo.**, Kansas City—Western Refrigeration Co., H. L. Filkins, Mgr., Twenty-first and Campbell Sts., reported, let contract to S. Patti Constr. Co., 626 Lee Bldg., for erection ice plant, Fifteenth and Winchester Sts.; 1 story, brick; Ralph H. Oliver, Archt., 115 S. Dearborn St., Chicago, Ill.

**Okla.**, Oklahoma City—Wiley F. Corl, Pres., Commonwealth Utilities Corp., Security Bldg., St. Louis, Mo., reported, acquired New State Ice Co.'s plant, manufacture ice and ice cream; will operate. Mr. Corl wires: "We have acquired New State Ice Co.'s plants, Oklahoma City; capacity, including storage equivalent to 350 tons day; no unusual improvements contemplated."

**S. C.**, Anderson—J. M. King of Seneca, reported, plans establishing 30-ton ice plant, expending about \$40,000; plant to be known as Electric City Ice Co.

**Tenn.**, Memphis—Mr. Bowers Stores Corp. erecting \$300,000 distributing warehouse. See Building News—Contracts Awarded—Warehouses.

**Texas**, Dallas—Southern Ice & Utilities Co., Santa Fe Bldg., reported, plans plant improvements.

**Texas**, Houston—Claude Kavanaugh, Post-Dispatch Bldg.; John Montgomery and associates interested in establishment of plant to manufacture "Dryice."

**Texas**, Palestine—Independent Ice Co., J.

H. Hanford, W. Oak St., reported, let contract to Fred Jones for new plant; work under way. 12-8

### Iron and Steel Plants

**Ala.**, Alabama City—Gulf States Steel Co., Brown-Marx Bldg., Birmingham, L. E. Geoghegan, Vice-Pres.-Gen. Mgr., reported, plans improvement program involving expenditure of \$2,500,000 when all work shall have been completed; Dwight P. Robinson & Co., Inc., 125 E. 46th St., New York, has contract to purchase and install four 90-h.p. boilers together with necessary appurtenances; two 60,000 cu. ft. per min. turbo-blowers; electric generators 10,000-kw-a capacity, together with condensers, water supply, reservoir and stand pipes; complete electrification of the drives on present rod mill; company manufactures wire rods, wire mills, galvanized, bar, plain, woven wire fence, etc.; coal mines of company are located at Sayre and at Altoona; ore mines at Shannon and steel mill with blast furnace, wire and nail mill, bar and rod mill at Alabama City near Gadsden. 9-22

**Texas**, Houston—Markle Steel Co., C. N. Markle, Pres., 1709 Shepherd St., advises: "The 10½ acre new site on the ship channel that we recently purchased is meant for future development; at the present time we have no definite plans as to improvements." 12-29

**Texas**, San Antonio—Alamo Iron Works, 130 Santa Clara St., offering 1750 shares 7% cumulative preferred stock through Central Trust Co., W. K. Ewing Co., Inc., W. C. Manlove & Co., City National Bank, T. G. Leighton and B. F. Dittmar Co., all San Antonio; purpose of issue to provide the company with additional working capital to take care of its increasing business and to provide additional warehouses and equipment at its four distributing points, which are San Antonio, Corpus Christi and Brownsville. 12-22

**W. Va.**, Benwood, Br. of Wheeling—Wheeling Steel Corp., I. M. Scott, Pres., Wheeling, reported, acquired Riverside tube plant of the National Tube Co.; purchase includes about 70 acres land, buildings with majority of equipment and two blast furnaces with equipment; will probably operate as separate unit.

### Land Development

**D. C.**, Washington—Elless Realty Corp. incorporated; Louis A. Stein, 309 G St. N. W.; L. Tabor.

**Florida**—Florida properties of Glenn H. Curtiss and associates, reported, consolidated as Glenn H. Curtiss Properties, Inc., with capital of \$3,500,000; included are Opa-Locka and Country Club Estates near Hialeah, Jackson and holdings near Fort Lauderdale, Jacksonville and Tampa; C. M. Keys of C. M. Keys & Co., 60 Broadway, New York, is president of company; will continue development work.

**Fla.**, Fellsmere—Indian River Nurseries & Development Corp., incorporated; R. J. Dunham, J. W. LaBruce.

**Fla.**, Haines City—Star Grove and Fruit Co., capital \$35,000, incorporated; G. W. Bailey, I. W. Smith.

**Fla.**, Jacksonville—Calkins & Tucker, Inc., capital \$25,000, incorporated; F. C. Calkins, Lynch Bldg., Finley Tucker, 301 W. Forsyth St.

**Fla.**, Jacksonville—E. L. Bostick, Inc., incorporated; E. L. Bostick, Eugene Bostick.

**Fla.**, Jacksonville—Daytona Realty Co., incorporated; W. H. Reynolds, Francis Couillard.

**Fla.**, Orlando—Overstreet Investment Co., State Bank Bldg., incorporated; M. O. Overstreet, R. T. Overstreet.

**Fla.**, St. Petersburg—Barrancas Land Co., capital \$50,000, incorporated; W. H. Knowles, M. A. Touart, E. 125 Ninth Ave., N.

**Fla.**, St. Petersburg—Maxwell Hunter, Inc., capital \$50,000, incorporated; C. M. Hunter, J. D. Howell.

**Fla.**, St. Petersburg—Fuller, Inc., capital \$50,000, incorporated; W. F. Fuller, E. A. Fuller.

**Fla.**, Tampa—Waco Holding Co., incorporated; T. B. Shelley, G. A. Pierce, 5202 Branch Ave.

**Fla.**, Tampa—Phillip F. Licata Co., incorporated; P. F. Licata, J. E. Chamoun.

**Fla.**, Tampa—City, Mayor Wall, reported, develop 100 acres for golf course and 8 acres for park.

**Fla.**, Tampa—West Shore Boulevard Co., incorporated; M. B. Davis, 2704 Jetton Ave., W. L. Cobb, Madison and Tampa St.

**Fla.**, Tampa—City, Mayor McKay, will probably expend \$30,000 for cemetery improvements.

**Fla.**, West Palm Beach—J. E. B. Holding

Co., incorporated; Horace VanMetre, First American Bank Bldg., J. L. Chapman, 321 Greymoor Dr.

**Fla.**, West Palm Beach—Griffin Investment Co., capital \$10,000, incorporated; T. L. Griffin, B. S. Griffin.

**Fla.**, West Palm Beach—L. V. McIntire, Inc., chartered; L. V. McIntire, R. C. Williams, Citizens Bank Bldg.

**Ky.**, Henderson—Pennyville Realty Co., capital \$10,000, incorporated; X. R. Royster, W. H. Soaper.

**Ky.**, Louisville—See Miscellaneous Enterprises.

**Ky.**, Louisville—Broadway Holding Co., incorporated; Charles C. Terry, Columbia Bldg., T. V. Ponder.

**La.**, Baton Rouge—Thomas Realty Co., Inc., incorporated; Alan E. Thomas, 907 Decatur St., Angie Williams, Baker, La.

**La.**, Lake Charles—S. W. Sweeney, reported, acquired 13,000 acres in Cameron parish.

**La.**, Shreveport—Halifax Planting Co., Inc., capital \$15,000, incorporated; C. W. Lane Giddens-Lane Bldg., Dr. E. A. Sartor, 339 Herndon Ave.

**La.**, Shreveport—Richlands Land and Royalties, Inc., chartered; Byron A. Irwin, Ardis Bldg., Shreveport; R. J. Coultas, Mattoon, Ill.

**Md.**, Baltimore—Cityco Realty Co., 7 St. Paul St., John J. Hurst, Pres., plans developing 22 acre tract on east side of Glenmore Ave.; will erect dwellings; city will install electric, gas, water and sewer.

**Miss.**, Clarksdale—Oakhurst Co., capital \$300,000, incorporated; I. C. Townes, N. B. Sessions.

**Miss.**, Greenwood—Leflore Farms, Inc., capital \$50,000, incorporated; B. F. Dulwebber, E. F. Glaser, C. E. Powell.

**Mo.**, Benton—Benton Land & Merchandise Co., incorporated; Ira W. Love, St. Louis, Phillip G. Irby, Cairo, Ill.

**Mo.**, Garber—Mrs. Ada Clodfelter, Springfield, reported, acquired town, will develop for summer resort.

**Mo.**, Kansas City—Tocama Realty Co., capital \$50,000, incorporated; Bradley W. Young, A. J. Prins.

**Mo.**, Kansas City—Abernathy Investment Co., 73d St. Terrace, Samuel O. Abernathy, Pres., reported, acquired additional land in Waldo district; develop for subdivision; erect 27 small homes.

**Mo.**, Kansas City—Contractors' Supply Co., reported, acquired tract on Sixteenth St., develop; erect number of small homes.

**Mo.**, Kansas City—Knollenberg Realty Co., capital \$40,000, incorporated; F. W. Knollenberg, Quincy, Ill.; Mary K. Orr, Kansas City.

**Mo.**, St. Louis—Walter L. Pfeffer, reported, acquired Westwood Country Club, develop subdivision; install swimming pool, tennis courts, etc.

**Mo.**, St. Louis—Rymar Realty Co., capital \$50,000, incorporated; Mary M. Davis, Wm. C. Kikbeusch, 5922 Idaho St.

**Mo.**, St. Louis—Voss Bros. Realty Co., incorporated; Carl N. Voss, Chester L. Voss, 7709 Brookline Terrace.

**Mo.**, Wellston—Schuermann Building & Realty Co., 1504 Klenlen St., capital \$50,000, incorporated; Norman J. Schuermann, 8506 Argyle St., St. Louis; John J. Schuermann, 153 N. Florissant Bl., Ferguson.

**N. C.**, Gastonia—A. E. Woltz, 508 S. York St., reported, develop subdivision.

**N. C.**, Hendersonville—Triangle Realty Corp., capital \$10,000, incorporated; G. W. Brooks, J. C. Morrow, Jr.

**Okla.**, Tulsa—See Miscellaneous Enterprises.

**S. C.**, Charleston—City, Thomas P. Stoney, Mayor, reported, interested in development of 50 acre golf course at Chicora Park.

**Tenn.**, Chattanooga—North Side Realty Co., Hamilton National Bank Bldg., capital \$10,000, incorporated; Charles C. Moore, Hamilton Natl. Bank Bldg., Marion L. Ulrich.

**Tenn.**, Harriman—Mid-West Orchard Service Co., capital \$15,000, incorporated; C. C. Hanford, Horace M. Carr.

**Texas**, Edinburg—J. M. Higginbotham, 4700 Lake Side Dr., Dallas, reported, acquired 200 acres irrigated land.

**Texas**, Galveston—Shearn Moody, reported, let contract to J. W. Woodruff, 3801 Old St., Galveston, for construction of first unit of Miramar Court, apartment camp on Boulevard between Thirty-third and Thirty-fifth Sts.; camp will be modernly equipped, Spanish architecture. 12-22

**Texas**, Houston—W. C. J. Marquart, 502 Merrill St., reported, acquired, 300 acres on south side of Buffalo Bayou.



Tex., Houston—R. H. Moers, Kress Bldg., reported, acquired 611 acres on Buffalo Bayou.

Tex., Houston—Judge R. E. Brooks, Stewart Bldg., reported, acquired 240 acres near Alameda.

Tex., Houston—Rev. Dr. Wm. States Jacob, 918 Main St., reported, acquired 269 acres south of Genoa, on Houston-Galveston highway.

Tex., Houston—R. A. Harvey, 224 Hathaway St., reported, acquired 384 acres on Katy Rd.

Tex., Laredo—St. Charles Co., reported, acquired 13,874 acres in Webb County; probably develop for colonization.

Tex., Rankin—W. H. C. Goode, Sidney, Ohio, reported, develop subdivision in West Lawn Addition.

Tex., San Angelo—I. Trolke, reported, interested in development of golf course; W. H. Mahon, Dallas, preparing plans.

Tex., San Antonio—Bexar County Land and Development Co., capital \$10,000, incorporated; Homer Rogers, Harry H. Rogers.

Tex., San Antonio—G. J. and Joe Lucchese of Lucchese Realty Co., Moore Bldg., reported, acquired tract in business section.

Tex., San Antonio—Woodlawn Estates, Inc., capital \$10,000, incorporated; Harry H. Rogers, Travis Bldg.; Thurman Barrett, 200 E. Pyron St.

Tex., San Antonio—St. Charles Co., reported, develop 13,874 acres in Webb County.

Va., Hopewell—City Point Development Co., capital \$50,000, incorporated; G. L. Spratley, Charles Akers.

Va., Hopewell—Commerce Street Realty Corp., capital \$50,000, incorporated; Charles Akers, Norwood Wilson.

Va., Norfolk—City, reported, acquired 65 acres, land adjoining Forest Lawn Cemetery for extension of cemetery.

Va., Petersburg—Overbrook Hills, Inc., capital \$25,000, incorporated; W. N. Anderson, S. R. Beasley.

### Lumber Enterprises

Ga., Savannah—W. W. Smith Lumber Co., capital \$50,000, incorporated; W. W. Smith, R. L. Brown, 217 W. 32nd St.; Jesse D. Smith.

Ga., Savannah—Savannah River Lumber Co., Savannah Bank & Trust Bldg., reported, started erection of additional plant at Port Wentworth to be completed by March 15; cost about \$250,000; company has contract to furnish Briggs Mfg. Co., 11631 Mack St., Detroit, Mich. (automobile body manufacturers), between 75,000,000 and 100,000,000 ft. material, dried and cut ready for use in manufacture of bodies. Savannah River Lumber Co. wires: "Our new construction at Port Wentworth will consist of 17 dry kilns, 20x150, brick construction; contract dry-kiln equipment placed with Moore Dry Kiln Co., 843 Blanche St., Jacksonville, Fla.; all brick and tile. Standard Brick and Tile Co., 460 Broadway, Macon, Ga.; have placed contract for Curtis 625 kv-a turbo generator; also installing additional boiler plant with 1500 h.p., possibly consist of 2 water tube boilers, not yet purchased; constructing building to house cut-up machinery; receiving bids for equipment, including necessary Lindermans, cut-ups, hand saws, surfacers, tenoners, etc., to handle an output of 150,000 ft. daily.

Ga., Waycross—Cline Manufacturing Co., capital \$50,000, incorporated; T. J. Dickey, W. L. Courson, V. D. Barn; operate sawmill.

N. C., Winston-Salem—Camel Lumber Co., capital \$50,000, incorporated; B. Beasley, Mount Airy; C. S. Parker, 1216 E. 21st St., Winston-Salem.

S. C., Orangeburg—Harper Lumber Co., capital \$10,000, chartered; W. T. Harper, C. E. Harper.

Tex., Dallas—Rogers Lumber & Manufacturing Co., 425 Second St., increased capital, \$80,000 to \$100,000.

Tex., Houston—Crane Lumber Co., capital \$25,000, incorporated; R. W. Houk, W. T. Caywood, 1703 Westheimer St.; C. A. Deavens.

### Mining

Fla., Miami—Adamant Stone Quarry Co., capital \$10,000, incorporated; J. S. Winterringer, Jack Brant, A. Brant.

Ky., Madisonville—Monroe Mining Co., capital \$10,000, incorporated; Geo. T. Collamore, H. B. Lee, O. S. Roberts.

Mo., Joplin—Childress Lead and Zinc Co., Frank Childress, Pres., Miners Bank Bldg., reported, acquired the Northern mine, which produces about 150 tons of concentrates weekly; company also operates the South

Side, Fox, Fort Worth and Whitebird mines.

Mo., Versailles—Central Missouri Mining Co., Finley N. Scott, Pres., reported, acquired machinery; will erect lead and zinc mill of 100 tons daily capacity.

South Carolina—H. G. Love, Fourth Ave. W., and R. L. Briggs, Hendersonville, N. C., reported, interested in developing placer gold deposits in Oconee County; mine is on the trend known as the Transylvania vein; gold assayed by Edgar B. Ward, mining Engr., Spruce Pine, N. C.

### Miscellaneous Construction

Ky., Louisville—Wading Pools—See Miscellaneous Enterprises.

La., Lake Charles—Wharf Sheds—P. Oliver & Son, Inc., 114 Bilbo St., low bidder at \$102,640 for construction 3 wharf sheds for Lake Charles Harbor and Terminal Dist.; Elmer E. Shutt, Engr. 12-8

La., New Orleans—Orleans Dredging Co., reported, has contract for driving piles and raising bulkhead in first section of lakeshore development project, between Bayou St. John and Orleans Canal.

La., Shreveport—Caddo Levee Board, reported, let contract to Woods Brothers Construction Co., Lincoln, Neb., at \$22,000 for bank protection work on Red River at Cairo bend to protect against erosion; work consists of building permanent 3 row pile timber training spur, 480 ft. long, at lower end of existing bank protection work in Caddo Parish. 12-15

Mo., St. Louis—Levee—Northern Mississippi River Comm. Dist., Office of Engr., Room 435 Custom House, receives bids Jan. 10 for earthwork in Levee Dist. No. 1. See Want Section—Bids Asked.

Tex., Corpus Christi—Robert Driscoll, Chmn., Navigation Comm., reported, additional improvements for port of Corpus Christi; has plans for 2 additional wharf and warehouse units, located east of present facilities and of same design; warehouses will be 303x160 ft., with 606 ft. frontage on basin; open bids about Jan. 23; also plans for another unit located on west side of present plant, to be 400x160 ft., similar design and construction of unit No. 5; will be used for cottonseed cake and cottonseed meal exclusively; proposed new units will add 160,960 sq. ft., making total of 408,408 sq. ft. of warehouse space; also total wharfage space of 2658 ft. on south side turning basin and give berthing space for 8 steamships; in addition to improvements will increase railroad trackage throughout port area; has \$1,500,000 available for improvements; Robert J. Cummins, Engr. 12-29

Tex., San Antonio—S. F. Crecelius, Flood Prevention Engr., advises contract for bend cut-off channel across Commerce and Market St. will probably be let some time in January. 12-15

### Miscellaneous Enterprises

Ala., Birmingham—Crawford, Johnson & Co., Inc., Ave. E and Twenty-second St., reported, will construct new (Coca-Cola) bottling plant cor. Eleventh Ave. and Thirty-third St.; has 300x240-ft. site; building to be 2-story and basement, steel, concrete and brick; install lighting, ventilating systems and modern machinery; double capacity of present plant; estimated cost \$150,000. 12-22

Ala., Mobile—Alabama Paving and Construction Co., incorporated; W. T. Sanders, Jr., Athens; W. Von Robertson, Jr., Birmingham; J. Gilbert Burton, First Natl. Bank Bldg., Mobile.

Ark., Cushman—Brown-Denison Contracting Co., capital \$60,000, incorporated; Alexander M. Denison, Walter H. Denison, both Cushman; F. S. Brown, Memphis, Tenn.

Ark., Little Rock—T. E. Hale Paint and Supply Co., 122 W. Fourth St., capital \$25,000, incorporated; T. E. Hale, H. S. Hale, Miss V. M. Lamb.

Ark., Little Rock—Monteath-Toll Electric Co., 1210 Booker St., capital \$10,000, incorporated; Richard F. Toll, Mrs. Mary Monteath.

Ark., Little Rock—T. E. Hale Paint and Paper Supply Co., 122 W. Fourth St., capital \$25,000, incorporated; T. E. Hale, 122 W. Fourth St.; Mrs. V. M. Lamb, H. S. Hale, 3110 High St.

Ark., Little Rock—Tiger's Drug Co., Inc., Sixteenth and Park Ave., capital \$20,000, chartered; Homer F. Hall, Loddie L. Hall, 2808 W. 12th St.

Fla., Brooksville—Mountain Park Amusement Co., incorporated; C. V. Strakey, W. D. Cobb, J. G. Tucker.

Fla., Clearwater—Southern Amusements Corp., Scranton Arcade, chartered; T. E.

Hancock, S. E. Simmons, Mary E. Plumb; plan erection of amusement park.

Fla., Cocoa—Brown Electric Co., incorporated; F. L. Brown, B. B. Brown, W. H. Berg.

Fla., Ft. Myers—Evans Pharmacy, Inc., capital \$25,000, chartered; C. C. Puraley, Edw. L. Evans, Edw. H. Evans.

Fla., Jacksonville—Printing—Tri-State Ticket Co., J. Otis Watts, Pres., reported, establish \$25,000 plant at 40 E. Union St.; installing special equipment to print 288,000 tickets per hour.

Fla., Jacksonville—McPhail's Chocolates, Inc., increased capital, \$50,000 to \$150,000.

Fla., Jacksonville—Christofoli Marble and Tile Co., Inc., capital \$10,000, chartered; Samuel Christofoli, E. E. Lewis, N. M. Unsch, 504 W. 18th St.

Fla., Jacksonville—Patent Medicines—Dr. A. J. Hager Chemical Corp., Inc., capital \$10,000, chartered; F. M. Parker, G. J. Reuter, S. E. Parker.

Fla., Jacksonville—Merchandise—Seven Eleven Dollar Store, Inc., chartered; A. Rabens, 126 E. 18th St.; I. Edelstein, A. Dworin.

Fla., Jacksonville—Arnold Brick, Stone and Tile Co., M. A. Arnold, Pres., Turner Rd. and Forty-seventh St., reported, receiving bid for marble and tile manufacturing plant, 1-story, 70x125-ft., galvanized iron.

Fla., Miami—Everglades Nurseries, Inc., chartered; H. W. Short, S. M. Short, J. E. Young, 1320 N. Bayshore Drive.

Fla., Miami—Contracting—Franks Building Co., capital \$10,000, W. S. Lee, H. M. Owen, F. H. Owen.

Fla., Orlando—Office Furniture—Roos Office Outfitters and Stationer, Inc., 211 S. Orange St., chartered; W. T. Roos, M. E. Roos, H. C. Jerome.

Fla., Palm Beach—Cosmetics—Redolent Products Co., capital \$50,000, chartered; F. W. Clarke, F. M. Hannon, Datura Arcade, J. L. Chapman, 321 Greymoor Dr.

Fla., St. Petersburg—Southern Radio, Inc., chartered; H. E. Kely, 1500 First St., N., Jason Hailey, 751 24th Ave., N., A. A. Hailey.

Fla., St. Petersburg—Automatic Domestic Appliance Corp., Inc., capital \$25,000, chartered; J. T. Lynch, Jr., A. B. Lambert, M. S. Rogers.

Fla., Tampa—Restaurants—Tampa Bay-shore Corp., chartered; G. E. Roosevelt, I. T. Alverson, R. A. Bigger.

Fla., Tampa—Tampa Floral Co., A. C. Luther, Pres., 2706 Jetton Ave., reported, will expend about \$100,000 on expansions and improvements; acquired 9-acre site on Swann Ave., between Howard and Lisbon; office and display room now under construction; plans 2 steel frame glass houses, 40x300-ft.; install overhead irrigation system. 12-1

Ga., Atlanta—Atlanta Paper Co., 225 More St. S. E., reported, erect boiler room, 1-story, 35x45 ft., brick, wood truss roof; receiving bids; Joe N. Eley, Engr., Atlanta Trust Bldg.

Ga., Augusta—John G. Wilson, Pres., Community Service and associates, interested in establishing municipal playgrounds, plans securing portion unused lands of the U. S. arsenal.

Ga., Columbus—White Laundry, Inc., Box 979, James C. Ogletree, Sec.-Treas., let contract to Williams Lumber Co., Inc., 13th St., for erection plant, 50x123 ft., brick, cement floor, built-up roof; complete laundry machinery furnished by American Laundry Machinery Co., Ross and Section Ave., Norwood, Cincinnati, Ohio; heating and electric lighting not awarded; Robert & Co., Inc., Architects, Bona Allen Bldg., Atlanta. 12-22

Ga., Hawkinsville—Hawkinsville Fruit and Candy Co., capital \$10,000, incorporated; Nick G. Cabero, Lee G. Cabero, Andrew Cabero.

Ky., Louisville—Temple Theatre Corp., reported, increased capital, \$75,000 to \$100,000.

Ky., Louisville—Bender Spring Co., 715 S. Brook St., increased capital to \$10,000.

Ky., Louisville—Board of Park Commrs., J. G. Goss, Mgr., plans expending \$1,500,000 pending bond issue and sale; improvements include playgrounds, wading pools, tennis courts, golf links, comfort stations, repair shop building for repairs of all equipment, automobiles, etc., used in park and boulevards, etc. See Want Section—Machinery and Supplies.

Ky., West Liberty—Southeastern Kentucky Utilities Co., capital \$100,000, incorporated; Claude D. Raber, Dorothy Fleming, John D. DeFoe.

La., Crowley—Restaurants, etc.—The Inn,

Inc., capital \$20,000, chartered; Edward G. Bergeron, Mansfield A. Bergeron, John T. Hinchliffe.

La., Lafayette—Lafayette Creamery Co., Inc., John Borel, Mgr., reported, purchased equipment from Charles Denney Co., Inc., 524 Magazine St., New Orleans.

La., Lake Charles—Funeral Director—Burke & Trotti, Ltd., capital \$60,000, chartered; J. A. Trotti, 920 Bilbo St.; John Burke, J. A. Trotti, Jr.

La., Mansfield—Trademarks, etc.—The Law Co., Inc., capital \$10,000, chartered; Chas. T. Law, Wm. Law, Chas. R. Law.

La., Ruston—Ruston-Lincoln Sanatorium, Inc., capital \$50,000, chartered; B. H. Rainwater, O. E. Hodge, G. A. Davis.

Md., Baltimore—Fish Dry Cleaning Co., Inc., Max Fish, Pres., 2551 Pennsylvania Ave., will erect dry-cleaning plant, corner Twenty-fifth and Cecil Ave.; 1-story, 125x283-ft., fireproof, brick and concrete, wood floors, saw tooth, steel and glass roof; Benj. Frank, Archt., 517 N. Charles St., receive bids first week in January; James Posey, Mech. Engr., 201 W. Franklin St.; Henry Massert, Struct. Engr., 324 N. Charles St. 9-15

Md., Baltimore—The Davison Chemical Co., Garrett Bldg., completing concrete work on leaching plant being erected at Curtis Bay; leaching plant used to extract copper from iron before it is shipped to blast furnaces; 1-story steel building, 56x300 ft. 10-13

Md., Cumberland—Tri-State Engineering Co., capital \$100,000, incorporated; Burton C. Colt, Brenner R. Beckner, Claiborne M. James.

Md., Cumberland—Celanese Corp., 15 E. 26th St., New York, which recently obtained control of Celluloid Co., 50 W. 40th St., New York, with present works at Newark, N. J., and changed name to Celluloid Corp. of America, reported, plans erecting \$2,500,000 factory; has site 1000x300 ft.; the Celanese Corp. will manufacture for the Celluloid Corp. a cellulose acetate; plans are being completed and bids soon asked for early completion of plant; probably employ additional 500 persons; Arthur J. Fitch, local Mgr. 8-4

Miss., Billups, mail Artesia—A. H. Barber & Co., 216 N. Canal St., Chicago, Ill., reported, let contract to Badger & Badger, Columbus, for erection cheese plant at Billups station. 11-24

Miss., Biloxi—Eugene Dowlin, reported, will rebuild burned laundry plant, cost about \$20,000.

Miss., Biloxi—Biloxi Milk Products Co., Inc., capital \$10,000, chartered; Emilie M. Salvant, C. A. Mugnier.

Miss., Gulfport—City Commrs., reported, let contract to Ahrens-Fox Fire Engine Co., Coleman and Alfred St., Cincinnati, Ohio, for fire fighting equipment. 9-29

Miss., Gulfport—U. S. Veterans Bureau, Const. Div., Washington, D. C., plans erecting laundry at U. S. V. Hospital No. 74; receive bids Jan. 31. See Want Section—Bids Asked.

Miss., Meridian—Merchandise—Meridian International Co., capital \$25,000, incorporated; S. E. Foster, Monroe Rooks, Clarence Vaughan.

Miss., Winona—Kraft Cheese Co., C. H. Kraft, V.-Pres., 402 Rush St., Chicago, Ill., reported, contemplates establishing milk plant, soon begin construction that plant may be ready for operation by April 1, 1928.

Mo., Cape Girardeau—Mercantile—Cape Battery and Supply Co., incorporated; Fay D. Bacon, L. G. Bacon, both Poplar Bluff; Leo Wagner, Cape Girardeau.

Mo., Caruthersville—Fort Scott Coca-Cola Bottling Co., incorporated; C. S. McCord, M. C. Meord, T. M. Medlin.

Mo., Kansas City—Country Club Creamery Co., 4023 Mill St., increased capital, \$20,400 to \$40,460.

Mo., Kansas City—Building Blocks—Nel-Stone Equipment Mfg. Co., capital \$10,000, incorporated; Jno. M. Cleary, 1118 Scarritt Bldg.; A. E. Long, 404 E. Ninth St.

Mo., Kansas City—Home Dairy Co., capital \$200,000, incorporated; J. J. Herman, Blue Springs, Mo.; R. H. Glattharr, Lawrence, Kan.; A. J. Elliott, 704 E. 47th St., Kansas City.

Mo., Kansas City—Contracting—Bickel Co., 1016 Baltimore Ave., incorporated; E. J. Bickel, A. Bickel, B. McGuiston.

Mo., Poplar Bluffs—Pevely Dairy Co., 1001 S. Grand St., St. Louis, Mo., reported, establish branch plant; leased new Berryman building now under construction.

Mo., St. Joseph—Plumbing and Heating Co., incorporated; Herbert D. Brach, 1017 S. 11th St.; Nora J. Brach, Adolph C. Rock.

Mo., St. Louis—Loft Building—Marly Investment Co., reported, plans erecting \$300,-

000 building on S. Vandeventer Ave. south of Shaw Ave.; 3-story, 90x600 ft., reinforced concrete; Widmer Engineering Co., Archts., Laclede Gas Bldg.

Mo., St. Louis—Standard Cleaning and Dyeing Co., A. J. Buchmueller, Sec., 3444 Gravois St., reported, receiving bids for erection plant addition, 1 story brick.

Mo., St. Louis—Merchandise—Southwest Sales Co., capital \$10,000, incorporated; Fred C. Rabauck, 5864 Northland Ave.; Estelle Summers, 401 E. Swan St.

Mo., St. Louis—Merchandise—Service Sales, Inc., chartered; E. J. Richman, James H. Aspley, Ira D. Daniels.

Mo., St. Louis—Merchandise—Jordan Foods, Inc., capital \$25,000, chartered; Otto Ppaeth, 19 Fair Oaks, David S. Oaks, both St. Louis, August Jung, Sr., Chicago, Ill.

Mo., St. Louis—Merchandise—United Stores Co., capital \$25,000, incorporated; I. H. Coleman, Wm. Brewer, Earl H. C. Lurkins, 506 Olive St.

Mo., St. Louis—Roth-Dergquist Tailoring Co., incorporated; Andy H. Bergquist, 721 Pine St.; Geo. P. Roth, 3820 Iowa St.; Aloys M. Jobat, 1155 Chouteau St.

Mo., St. Louis—Beedle-Smith & Feagan Paint Co., capital \$15,000, incorporated; Fred W. Beedle, Fowler Smith, Frank T. Feagan.

Mo., Vandalla—Clothing—Ely & Walker Dry Goods Co., C. M. Lawson, Pres., 1520 Washington Ave., St. Louis, reported, plans erecting \$45,000 factory, 2 story brick; Reister & Rubach, Archts., Murphy Bldg., East St. Louis, Ill., soon receive bids. 11-17

N. C., Belcross—Bray Towing Co., Inc., capital \$100,000, chartered; F. T. Bray, Norfolk; R. L. Bray, Belcross; C. E. Thompson, Elizabeth City.

N. C., Goldsboro—Belk's Department Store, capital \$60,000, incorporated; Dr. J. M. Belk, Monroe; W. H. Belk, Hawthorne Lane, Charlotte; A. F. Stevens, Winston-Salem.

N. C., Greensboro—Children's Dresses—Seover Manufacturing Co., Inc., E. Sycamore St., James L. Scott, Pres.-Mgr., has plant; machines installed by Singer Sewing Machine Co., 122 Spring St., Atlanta, Ga. See Wants Section—Miscellaneous. 12-15

N. C., Lenoir—Kent-Coffey Manufacturing Co., capital \$1,000,000, chartered; F. H. Coffey, W. L. Minnish, Harold F. Coffey.

N. C., Newton—Merchandise—Parks-Belk, Brumley Co., capital \$100,000, incorporated; J. G. Parks, Concord; W. H. Belk, Hawthorne Lane, Charlotte; J. M. Belk, Monroe.

S. C., Rock Hill—T. H. Childs, of Union, reported, plans establishing plant to manufacture butter, sump to handle 7,000 lbs. cream weekly.

Okla., Oklahoma City—See Ice and Cold Storage plants.

Okla., Tulsa—Race Track, etc.—Oklahoma Agricultural, Breeding and Racing Assn., incorporated under laws of Delaware, and the Oklahoma Jockey Club, reported, announce plans for promotion of \$500,000 project to be known as Edgewood Park for racing, polo, football and other sporting events; has site of 110 acres about 14 miles east of Tulsa; 3-story and basement clubhouse, modern stables for 600 horses, 1-mile course, grandstand and lawn to accommodate 10,000 persons, 30 acres for parking space, roads, lights, water, gas, plumbing and landscaping all included in plans; C. T. Henshall, Alexander Bldg., directing affairs of club.

Tenn., Chattanooga—Wm. F. Fritts Drug Co., 609 Broad St., increased capital, \$50,000 to \$100,000.

Tenn., Johnson City—Colonial Drug Co., capital \$15,000, incorporated; N. F. Renier, J. R. Simmonds.

Tenn., Knoxville—Avondale Farm Creamery, capital \$60,000, Journal Bldg., chartered; A. I. Smith, Mattie Lee Smith, Marian E. Smith.

Tenn., Nashville—Woodroof Electric Co., capital \$15,000, incorporated; E. B. Woodroof, 2710 West End St., Thos. Sullivan, Fred Clayton.

Tenn., Nashville—Nashier Iron Works Co., incorporated; A. W. Stockell, Wm. H. Lindsey, both Fourth and First Bldg.; D. Weaver, 178 Second Ave., N., A. W. Stockell, Fourth and First Bldg.

Tenn., Nashville—Mercantile—J. S. Reeves & Co., Inc., 208 Public Square, capital \$50,000, chartered; D. F. C. Reeves, 2120 West End Ave.; J. E. Sparkman, Green Benton.

Tenn., Sweetwater—Carnation Milk Products Co., Walter Page, Pres., Oconomowoc, Wis., advises at this time we are not building condensery at Sweetwater. 11-24

Tex., Amarillo—Plains Capital News Publishing Co., capital \$10,000, incorporated; H.

C. Anderson, 701 Tennessee St., A. C. Hays, 311 Alabama St., E. C. Flinn.

Tex., Arlington—Jellies, Jams, etc.—Ding-Dong Food Products Manufacturing Co., Inc., Ben H. Smith, Pres.-Mgr., let contract to Ben D. White, Davidson St., for erect on new building in fall of 1928, 3-story, 80x100-ft., concrete base with wooden frame and iron; concrete and wood floors; composition roof, cost \$12,000 to \$15,000; install canning and closing machines, etc.; contract includes heating, heating, power, and electric lighting; plumbing to Arlington Plumbing Co. See Want Section—Machinery and Supplies. 12-22

Tex., Austin—McGuire Cleaning and Dyeing Co., Inc., capital \$10,000, chartered; J. B. Heinen, Mrs. Lillian Heinen, W. T. Whitehurst.

Tex., Beaumont—Southern Engineering Equipment Co., capital \$10,000, incorporated; Wm. T. Dean, San Jacinto Life Bldg., B. R. Schultz, Chas. E. Dickey.

Tex., Corpus Christi—W. E. Pope, care of Corpus Christi Times, reported, receive bids Jan. 24 for erection 8-story, 75x150-ft. office and printing plant on Chapparral St., brick and tile, reinforced concrete, fireproof; E. Kenneth Ahler, Archt., State National Bank Bldg. 11-17

Tex., Dallas—Security Construction Co., capital \$10,000, incorporated; W. H. Whiten-ton, J. C. Gilbert, 4020 Swiss St., Charles Brewington.

Tex., Dallas—Distributors—R. B. George Machinery Co., 302 N. Market St., reported, plans erecting \$60,000 building on S. Lamar St.; daylight type construction; acquired 300 x260-ft. site.

Tex., Edna—Humpty Dumpty Stores of Edna and Ganado, incorporated; John Linger, E. F. Linger, Anna Linger.

Tex., El Paso—International Hatchery, A. H. Demke, Owner, reported, plans establishing incubator plant at 1617 Texas St., initial capacity 47,000 eggs; cost about \$10,000; first unit to be in operation by Jan. 15; other units will be added as needed.

Tex., Fort Worth—International Chemical Co., Inc., Mascher St., Philadelphia, Pa., reported, contemplates locating new factory in Texas; Dr. Walter Hohenau, Wilmington, Del., research Engr.

Tex., Fort Worth—Carter Publication Co., Inc., increased capital, \$1,000,000 to \$1,500,000.

Tex., Fredericksburg—Fredericksburg Co-operative Creamery incorporated; Henry Mogford, E. J. Ahrens, Alfred Neffendorf; acquired site; erecting creamery plant.

Tex., Galveston—Texas Nail and Wire Manufacturing Co., reported, let contract Bruce-Macbeth Engine Co., 2111 Center St. N. W., Cleveland, Ohio, to install gas engines for power plant. 12-1

Tex., Greenville—J. L. Collins, reported, interested in establishment of piano manufacturing plant.

Tex., Houston—Burkhart Laundry & Dye Works, Jackson and Congress St., reported, acquired site, Franklin and Jackson St., 29x91-ft., plans erecting modern plant.

Tex., Houston—Weise Mathews Strainer Machine Co., incorporated; W. M. Mathews, Fay Mathews, E. F. Weise, 3004 Bagby St.

Tex., Paris—Boulevard Creamery Co., capital \$10,000, incorporated; J. L. Phillips, J. A. Bier, Mrs. E. S. Bier.

Tex., San Angelo—Findlater Hardware Co., Chadbourne St., plans erecting new plant; 75x180 ft., mill construction, concrete floors, built-up roof, cost about \$40,000; open bids in about 3 weeks' time; A. F. Korn and B. W. Morgan, Associate Archts., Thomas Bldg., Dallas, and San Angelo. 12-29

Tex., San Antonio—Star Chemical Co., capital \$10,000, incorporated; Frank R. Newton, Frost Natl. Bank Bldg., A. T. Stevens, 3017 Broadway, Frank R. Newton, Jr., Frost Natl. Bank Bldg.

Tex., San Antonio—Standard Printing Co., 205½ Presa St., let contract to E. A. Huebner, Moore Bldg., for erection plant addition concrete and brick.

Tex., Victoria—Crescent Valley Creamery Co., Cureo, reported, establish creamery and ice cream plant, cost about \$25,000.

Tex., Waco—Karem Temple Building Corp., capital \$50,000, chartered; G. H. Zimmerman, 2325 Gorman Ave., W. F. Quebe, Masonic Temple Bldg., Frank M. Miller, 720 N. 15th St.

Va., Covington—Bakery—Beck Brothers, Inc., capital \$50,000, chartered; Charles J. Beck, A. L. Garber, Albert V. Beck, all Harrisonburg.

Va., Hopewell—Nifty Jifty Stores, Inc.,



capital \$25,000, chartered; J. A. Dove, R. A. Mays, H. S. Mays.

W. Va., Parkersburg—Parkersburg Community Bridge Co. incorporated; D. B. Crawford, H. J. Lockhart, John M. Crawford.

W. Va., Point Pleasant—Clothing—Reliance Manufacturing Co., Frank Scholz, local Mgr., reported, plans enlarging plant, will remodel and install machinery in building owned by W. H. Vaught, add about 35 additional persons.

W. Va., Terra Alta—City, reported, contemplates installing additional fire fighting equipment. Address City Clerk.

### Motor Bus Lines and Terminals

Ala., Montgomery—Dairies Service Co., Shepherd Bldg., reported, applied for permit to operate refrigeration milk line between Montgomery and Birmingham and Montgomery and Haynesville.

Ky., Falmouth—The Independence, Covington and Cincinnati Bus Co., incorporated; A. H. Barker, H. W. Bishop, J. J. Austin.

Ky., Lexington—Steam Appliance Transit Corp., capital \$150,000, incorporated; John R. Humphrey, 1109 Slashes Rd., Charles W. Stiles, W. W. Peavyhouse, 137 Lincoln Ave.; reported, erect shops for servicing motors.

Texas—Railroad Coman., through bus division, granted permit for sale of six bus lines in Texas as follows: The Fort Worth-Grapevine to J. H. Banker; Fort Worth-Springtown-Krum line to R. F. Plimlee; Beaumont-Port Arthur lines to J. G. Holzclaw, 366 Liberty St., Beaumont; Eastland-Dublin line to W. B. Wilson; Landley's Eastland-Ranger routes to West Texas Coaches and half interest in Spanish-American Travel Agency to Daniel Gayton and Charles Conner.

Tex., Amarillo—Safety First Bus Co. incorporated; D. E. Brown, W. E. Rowe.

### Motor Cars, Garages, Filling Stations

Fla., Manatee—Manatee Auto Wrecking Co., Inc., chartered; S. B. Kelsner, A. R. Oldham.

Fla., St. Petersburg—McCutcheon Chevrolet Co., Inc., capital \$20,000, chartered; T. C. McCutcheon, R. J. McCutcheon, Jr., 417 76th St. S., P. R. McCutcheon, 2360 Second Ave. N.

Ga., Atlanta—Following additional sub-contracts awarded for Chevrolet assembly and body plant being erected by General Motors Corp., Detroit, Mich.: Painting, Anderson and Majors, Jacksonville, Fla.; metal weatherstrip, Chamberlain Metal Weatherstrip Co., 46 Fairlie St., Atlanta, Ga.; metal enclosures and partitions, The E. F. Hausman Co., Columbus, Ohio; marble, slate and terrazzo, J. Korizan Tile Co., Bona Allen Bldg., Atlanta; plastering, Robert Rae, Liggett Bldg., Jacksonville, Fla.; folding partitions, The J. G. Wilson Co., Norfolk, Va.; cement roofing tile, American Cement Tile Mfg. Co., Candler Bldg., Atlanta; drain tile, Carolina Portland Cement Co.; metal lath, Southern G. F. Co., 263 Decatur St.; granite, Southeastern Co., 1 Broad St., Charleston, S. C.; equipment, R. S. Armstrong & Bro. Co., 676 Marietta St.; building materials, DeJarnette Supply Co., 1001 Boulevard N. E.; sheet metal work, Atlanta Sheet Metal Works, 799 Marietta St.; face brick, Cromer & Thornton, Inc., 215 Decatur St.; building tile, Interlocking Tile Co., Bona Allen Bldg.; waterproofing, Truscon Laboratories, Forsyth Bldg., all Atlanta; window cleaning device, R. C. Nazle, 501 Detroit Savings Bank Bldg.; Kalamain doors, Metallic Door and Specialty Co., both Detroit, Mich.; common brick, Standard Brick and Tile Co., 460 Broad St., Macon, Ga.; 100,000-gal. water tank, with 100-ft. steel tower, R. D. Cole Mfg. Co., Newnan, Ga.; dumbwaiters, Sedgewick Machine Works, 150 W. 15th St., New York City; electrical work, Walker Electric Co., Bona Allen Bldg., Atlanta; foundations about 75 per cent complete, structural steel erection progressing; cement tile roof started; skylights, Robertson Mfg. Co., Detroit, Mich.; Seaboard & Southern Construction Co., Inc., 101 Marietta Bldg., Atlanta, and 216 Hildebrandt Bldg., Jacksonville, Fla., Gen. Contr.

Ga., Atlanta—H. A. Whitmire, 57 Hayden St., reported, has permit for \$12,000 garage at 301 Hayden St.; 1 story, metal and concrete block.

Ga., Savannah—R. J. Whalley Co., reported, has contract for erection service station for the DeSoto Motor Co., E. S. Richardson, Propr., 29 W. Liberty St.; cost about \$25,000; to be completed by Feb. 15.

Ky., Fullerton—Fullerton Motor Co., capital \$24,000, incorporated; E. G. Newberry, J. F. Taylor, S. A. Stewart.

Ky., Louisville—The LeBlonde-Schacht

Truck Co. of Kentucky chartered; Harold LeBlond, Norman G. Schacht, H. A. Collins.

Ky., Richmond—Canfield Taxi Co. incorporated; C. M. Canfield, Lennie Canfield, Morris Canfield.

La., Crowley—Cash Auto Supply House, Inc., capital \$20,000, chartered; Edw. G. Bergeron, Mansfield A. Bergeron, John T. Hinchliffe.

La., New Iberia—Joseph A. Daigre, reported, plans erecting filling station at Weeks and Mais St., to be occupied by LeBlanc & Broussard.

La., New Orleans—Romain-Manford Cadillac Co., Inc., capital \$100,000, chartered; C. W. Manford, 2408 Main St., Houston, Tex.; Coleman Romain, 1919 State St., New Orleans.

Miss., Jackson—Mississippi Oldsmobile Co., capital \$15,000, incorporated; Walter R. Lee, 516 N. Jefferson St.; A. Y. Harper, Mercantile Bank Bldg.; Harrington Hillzlm, St. Anne St.

Mo., Kahoka—Kahoka Motor Co., capital \$15,000, incorporated; Gus Delaney, Vess Delaney, both Edina; V. Hudson, Kahoka.

Mo., West Plains—Wasson & Johnson Chevrolet Co., capital \$12,000, incorporated; Carl Wasson, Ivan Johnson, Kermit Wasson.

N. C., Henderson—Corbitt Truck Co., capital \$75,000, incorporated; R. J. Corbitt, J. P. Zollicoffer, Wm. S. Corbitt.

S. C., Aiken—Holley Motor Co., reported, plans erecting \$35,000 garage and sales building; brick and concrete; J. H. Johnson, Archt.

Tenn., Chattanooga—Volunteer Garage Co., E. Ninth St., capital \$10,000, incorporated; Howard A. Reed, 505 Douglas St.; Louis H. Bull, Volunteer Life Bldg.; G. Monning.

Tex., Fort Worth—Percy Garrett Motor Co., 1022 Lamar St., reported, has permit for erection \$100,000 building at Lexington and Seventh St.; 2-story, 100x210 ft., with floor space of approximately 42,000 sq. ft. Percy Garrett Motor Co. wires, mechanical plans on building not complete, contract for excavation and foundation awarded to Butcher & Sweeney, 807 Throckmorton St.; building to be reinforced concrete and brick, 2-story, fireproof, install ramps.

Tex., Houston—R. E. Houser, 817 Dallas St., reported, let contract to West & Jensen at \$15,464 for erection of auto laundry and lubricatorium at Main and Drew St., reinforced concrete, steel hollow tile and brick; plumbing to Wyllie Calvert Plumbing and Heating Co., 1411 San Jacinto St.; electrical work to Barden Electric & Contracting Co., 111 Main St.; J. W. Northrup, Jr., Archt., West Bldg.

Tex., Houston—Don Hall, Cotton Exchange Bldg., reported, has contract to erect building at Lamar and San Jacinto St. for Mosehart & Keller Automobile Co., 1120 McKinney St.; 3-story, 100x150 ft., reinforced concrete, steel, hollow tile, brick and stone trim; A. C. Finn, Archt., Bankers Mortgage Bldg.

Tex., San Saba—A. E. May, reported, plans erecting 1-story, foundation for 2 stories, 65x82-ft. garage and display room, reinforced concrete, steel and brick, cost about \$16,000; receive bids about Jan. 6; Beverly S. Spillman, Archt., Alamo Bank Bldg.

Tex., Taylor—O. E. Anderson receiving bids for erection 16x61-ft. garage building, 1-story, reinforced concrete frame, metal brick siding, cement roof, concrete foundation, cement floor; cost about \$14,000; H. F. Kuehne, Archt., 824 Littlefield Bldg., Austin.

Va., Richmond—Marshall Realty Co., reported, has permit for erection \$50,000 garage at 310 N. Eighth St., brick and concrete.

Va., Roanoke—Maple Leaf Garage, Inc., capital \$15,000, chartered; H. F. Logan, Robert H. Logan, Burks Logan, all Salem.

### Roads, Streets and Paving

In connection with LAND DEVELOPMENT large sums are expended for roads, streets, paving and sidewalks. Details will be found under that classification.

#### Proposed Construction

Ala., Birmingham—Jefferson County Board of Revenue, reported, receives bids Jan. 17 for bituminous concrete paving on 2 roads and bridge; 7600 sq. yd. Gate City-Irondale road; 6000 sq. yd. roadway, from Hollywood to Rosedale; rebuild 100-ft. span; C. J. Rogers, County Engr.

Ala., Prattville—State Highway Comm., Woolsey Fennell, Highway Director, Montgomery, receives bids Jan. 25 for concrete culverts and headwalls, Autauga County, on road between Prattville and Autaugaville; 40,000 lb. reinforcing steel; plans on file W. A. McCalla, State Highway Engr.

Ark., Fort Smith—See Sewer Construction.

Ark., Little Rock—City, Horace Knowlton, Clk., plans grading, draining, curbing, guttering and paving Blair St., O to P, and P St. from Prospect Ave. to Harrison St.

Ark., Warren—Dist. No. 6 plans paving East Railroad Ave. Address Board of Improvement, G. R. Blankenship.

Fla., Brooksville—City plans expending \$235,000 for street paving, including Main St., 40-ft. wide. Address City Clk.

Fla., Pensacola—Escambia County Commrs. plan road in western part of county, connecting Hurst-Hammock road near Beulah with Spanish Trail; Langley Bell, Clk.

Fla., St. Augustine—St. John's County Commrs., O. P. Goode, Clk., receive bids Jan. 19 to build or improve 3 sections of Road No. 3; Sec. A—St. Augustine to Spuds, 127,000 lin. ft. 2x6-in. cypress curbing, 115,800 sq. yd. 4-in. lime rock surfacing, 118,100 sq. yd. asphalt slag treatment, alternate bids, 118,100 sq. yd. 1 1/4-in. natural Kentucky rock asphalt surfacing, or 1 1/4-in. sheet asphalt surface course; Sec. B—Spuds to Hastings, 23,700 asphalt and slag surface treatment; Sec. C—11.5 mi. Hastings to Flagler County line, 108,000 sq. yd. asphalt and slag surface treatment; plans from C. Samuel Johnson, County Mgr.

Fla., Tampa—City Comm., W. Lesley Brown, Mgr., plans receiving bids to pave portions of Fern, Twenty-third and Twenty-fourth St., and Powhatan Ave.; R. D. Martin, City Engr.

Ga., Forsyth—Monroe County Commrs. considering completing Route 7, from Culloden to Crawford County line.

Ga., Valdosta—Lowndes County plans paving State Highway No. 38, from Valdosta to Clinch County line. Address County Commrs.

Ky., Catlettsburg—State Highway Comm., Frankfort, received low bid from Ashland Supply Co., Ashland, at \$96,827 for grading and draining 10.5 mi. Hood's Creek road, from Princess to Bellefonte.

Louisiana—Louisiana Highway Comm., Frank T. Payne, Chmn., Baton Rouge, received low bids for 4 roads: East Feliciana Parish—13.19 mi. grading and drainage structures, Clinton-Bluff Creek road, Dr. F. P. Jones, Leesville, \$35,598; 1.778 mi. drainage structures and embankment, Baton Rouge-Greensburg road, Dr. F. P. Jones, \$37,774; Evangeline Parish—10.077 mi. Ville Platte-Bimble road, Dr. F. P. Jones, \$53,877; Livingston-Tangipahoa Parishes—6.057 mi. gravel, Albany-Hammond cut-off Highway, C. J. Richard & Son, Baton Rouge, \$41,845.

La., Baton Rouge—East Baton Rouge Parish Police Jury, F. A. Woods, Sec., Road and Bridge Committee, receives bids Jan. 18 to furnish and spread 4500 cu. yd. washed gravel on Milldale road; 1200 cu. yd. washed gravel on Pearis road; 1200 cu. yd. on Spurgeon road; Edward Wax, Supvr. of Roads, Courthouse.

La., DeRidder—Beauregard Parish, Supvr. Board of Road Dist. No. 1, D. W. McFatter, Sec., receives bids Jan. 24 for 16,297 mi. grading and bridges on road from Beauregard-Calcasieu line to connect with State Highway No. 143 near Whitman home; 40,000 cu. yd. grading, 410 lin. ft. new bridges and repairing existing bridges; plans on file.

La., Greensburg—Louisiana Highway Comm., Frank T. Payne, Chmn., Baton Rouge, received low bid from Simmons Bros., Warner-ton, La., at \$66,565, for 5.64 mi. Amite-Baton Rouge Highway, St. Helena Parish.

La., Lake Charles—P. Olivier & Son, Inc., 114 Bilbo St., low bidder at \$12,847, to pave and improve North Ryan Street Coulee.

La., Opelousas—City, J. M. Prescott, Clk., receives bids Jan. 10 to surface with asphalt on Winnfield rock or concrete base Market St. from Bellevue to Church, concrete curb and gutters; plans from City Engr.; A. J. Perrault, Mayor.

La., Winnfield—City and Winn Parish Police Jury, plan paving in business section and around Courthouse Square, with limestone concrete. Address City Clk.

Md., Baltimore—Board of Awards receives bids Jan. 11 to repair all concrete footways in various sections of city, in Repair Cont. No. 3; plans on file; Nathan L. Smith, Highways Engr.; C. F. Goob, Ch. Engr.; Wm. F. Broening, Mayor.

Md., Baltimore—City, Wm. F. Broening, Mayor, considering widening Charles St. 15 ft. on east side, between North Ave. and Twentieth St.; Nathan L. Smith, Highways Engr.; C. F. Goob, Ch. Engr.; Wm. O. Atwood, Engr. of Plans and Surveys.

Md., Baltimore—Board of Awards receives bids Jan. 11 to grade, curb and pave with 10,100 sq. yd. sheet asphalt on concrete base on streets in Cont. No. 447; plans on file; Nathan L. Smith, Highways Engr.; C. F. Goob, Ch. Engr.; Wm. F. Broening, Mayor.

Miss., Ackerman—State Highway Comm., W. B. Henry, Chmn., Jackson, reported, considering \$100,000 road building and paving in Choctaw County.

Miss., Canton—Madison County Board of Supvrs., W. B. Jones, Clk., completed plans for \$800,000 road building.

Miss., Corinth—Alcorn County Board of Supvrs., plans road from Lee Highway, east of Corinth, to Prentiss County line.

Miss., Hazelhurst—City plans receiving bids for 1,250-ft. paving, estimated cost \$30,000. Address City Clk.

Miss., Magnolia—Pike County Board of Supvrs., receives bids Jan. 12 for 1½ mi. road and bridges between Magnolia and Osyka.

Miss., Pascagoula—City plans sidewalks on both sides of school in South Pascagoula; F. H. McGowan, Const. Engr., Ocean Springs.

Miss., Waynesboro—City, Board of Aldermen, considering paving Front St. with bitulithic; Massena L. Culley, Const. Engr., New First Natl. Bank Bldg., Jackson.

Miss., Yazoo City—Yazoo County Board of Supvrs., receives bids Feb. 8 for 6¼ mi. road between Yazoo City and Moorehead.

Mo., Carthage—Carthage Special Road Dist., Allen McReynolds, Commr., plans grading, bridging and graveling 2 mi. Fairview Ave., from Grand Ave. east; city will gravel ½ mi. road, along southern limits of city. Address City Clk.

Mo., Moberly—City plans paving Rollins St., from Johnson to city limits; Carl Haynes, City Engr.

Mo., St. Louis—City, Board of Public Service, plans paving Delmar Blvd., between Hamilton and Skinker Blvd., with Warrenite bitulithic; \$27,560 appropriated.

Mo., St. Louis—Board of Public Service, reported, receives bids Jan. 17 for asphalt paving on Madison Ave., cost \$47,320; 4570 sq. yd. asphaltic concrete paving, Osceola St., \$25,800; 14,750 sq. yd. paving, cost \$90,700; W. W. Horner, Engr.

Mo., Sedalia—State Highway Dept., Jefferson City, plans letting contract in Feb. for Highway No. 65, south of Sedalia, Pettis County, to Benton County line; T. H. Cutler, State Highway Engr.

Mo., Springfield—Greene County Highway Comm., plans 12 roads: 9¼ mi. from Greene-Polk County line, through Walnut Grove to State Highway No. 12, northwest of Willard; 8 mi. from Willard to Polk County line; 6½ mi. from U. S. Highway No. 65, near Crystal Cave, to Polk County line; from Fair Grove to U. S. Highway No. 66, south of Strafford; 13 mi. from south end of No. 4, past Turner & Cody, U. S. Highway No. 60, then south to Christian County line; 6½ mi. from U. S. Highway No. 65, southeast of Springfield to Turner; 6 mi. Campbell Avenue road, from city limits to Christian County line; 11½ mi. from Galloway to State Highway No. 16, south of Brookline; 17½ mi. from State Highway No. 12, east of Ash Grove, through Bois D'Arc and Republic, to Christian County line; 4¼ mi. from Fair Grove to Webster County line; 4 mi. from Walnut Grove to Dade County line; from State Highway No. 12, east of Ash Grove to Willard-Walnut Grove road.

N. C., Wilmington—New Hanover County Commrs., Addison Hewlett, Chmn., plan building 5 roads: 1½ mi. hard surface Carolina Beach road to Fort Fisher; road through Arendia, connecting Princess Street road with Highway No. 30 and Forest Hills; macadam road through Sudubon, connecting old Wrightsville turnpike and new Wrightsville Highway; hard surfaced road through Winter Park, connecting old and new Wrightsville Beach highways; hard surface Borden's Ave., Brookwood.

N. C., Winston-Salem—Forsyth County Commrs., plan 50-ft. highway from Osburn Station to Walker road; C. M. Miller, County Engr.

Okla., Ada—See Water Works.

Okla., Tulsa—See Miscellaneous Enterprises.

Okla., Tulsa—City Comm., Herman E. Newblock, Mayor, created 2 paving districts, to improve Kenosha Ave., Independence to Santa Fe, and Independence St. from Santa Fe right of way to Lansing Ave.; received low bids from Standard Paving Co., 1742 E. Sixth St., at \$47,920 to pave heavy traffic roadway from First St. to intersection of Seventh St. and Maybelle Ave. 12-15

S. C., Camden—City plans paving 7 streets, including Market, Church, Haile; cost \$48,000. Address City Clk. See Financial News—Bond Issues Proposed.

S. C., Lexington—City, plans paving Main St., cost \$25,000. Address City Clk. See Financial News—Bond Issues Proposed.

Tennessee—Dept. of Highways and Public Works, C. N. Bass, Commr., Nashville, receives bids Jan. 18 for 3 roads and 6 bridges: Decatur and Perry Counties—concrete bent and steel bridge on .764 mi. State Highway No. 23 over Tennessee River at Perryville; Carroll County—19,536 mi. paving between Madison County line and Huntingdon; Madison County—14,664 mi. paving, State Highway No. 1 between Jackson and Carroll County line; Humphreys County—2 concrete and steel bridges on .068 mi. State Highway No. 1 over Trace Creek near Denver; Washington and Carter Counties—3,373 mi. grading and draining, State Highway between Johnson City and State Highway No. 67 near Watauga, also 2 bridges over 20-ft. span; Montgomery County—concrete and steel bridge on .063 mi. State Highway No. 12 over Red River near Clarksville; alternate bids for paving projects will be received for State-furnished Portland cement.

Tennessee—Dept. of Highways and Public Works, C. N. Bass, Commr., Nashville, receives bids Jan. 18 for 2 roads in Hamilton County: 6,706 mi. State Highway No. 2, between Silverdale and Bradley County line; 6,643 mi. State Highway No. 2, South Chickamauga Creek and Silverdale; plans on file.

Tenn., Altamont—Grundy County Commrs., plan road building, cost \$200,000. See Financial News—Bond Issues Proposed.

Tenn., Chattanooga—City, R. H. Crox, Commr. of Streets and Sewers, plans permanent paving, including improving McCallie Ave. and Market St.; F. K. Rosamond, City Treas.

Tenn., Chattanooga—Hamilton County Highway Commrs., J. Mitt Payne, receive bids Jan. 18 for 8-ft. concrete Lee Highway from Birds Mill Bridge to Bradley County line.

Tenn., Huntingdon—Dept. of Highways and Public Works, C. N. Bass, Commr., Nashville, plans Carroll County link in Austin Peay Highway, along east side of L. & N. R. R. from McKenzie to Atwood, via Jarrell and Trezevant, intersecting State Road No. 77, near Atwood.

Tenn., Memphis—City, C. C. Pasbhy, Clk., received low bid from F. S. Neely, Fidelity Bank Bldg., at \$9,316, to pave Rembert St., Poplar Ave. to Jefferson Ave.

Tenn., Mountain City—Dept. of Highways and Public Works, C. N. Bass, Commr., Nashville, considering rebuilding and maintaining road from Mountain City to Virginia line.

Tenn., Nashville—Dept. of Highways and Public Works, C. N. Bass, Ch. Highway Commr., considering through-line route from Nashville to Chattanooga, via Murfreesboro, McMinnville, Altamont, Morganville and Whitwell.

Tenn., Ripley—Lauderdale County, George W. Young, Judge, plans roads to serve rural districts, and cross 2 main trunk lines; cost \$1,000,000. See Financial News—Bond Issues Proposed. 11-17

Tenn., Sevierville—Sevier County plans road building, cost \$375,000. Address County Commrs. See Financial News—Bond Issues Proposed.

Tenn., Springfield—City, C. H. Rickman, Mayor, contemplates expending \$225,000 for streets and sewers.

Tex., Arlington—City, W. G. Hiett, Mayor, receives bids Jan. 10 for 27,000 sq. yd. paving, with curbs, gutters and storm sewers; plans on file and from Noyes & Forrest, Engrs., Mercantile Bank Bldg., Dallas.

Tex., Benjamin—Knox County Oliver W. Lee County Judge plans road building in Road Dist. No. 5 cost \$280,000. See Financial News—Bond Issues Proposed. 12-8

Tex., Brownsville—Cameron County, Oscar C. Dancy, Judge, receives bids Jan. 26 for 32 mi. dirt work and structures on 3 roads: 13 mi. San Benito Precinct; 15 mi. Los Fresnos-Point Isabel Precinct; 4 mi. Brownsville Precinct. 12-22

Tex., Brownsville—State Highway Dept., R. S. Sterling, Chmn., Austin, receives bids Jan. 26 for 7 roads: Fourteenth St. out of Brownsville, into El Jardin, Brownsville Precinct; 11.8 mi. San Jose Ranch road, from east line of Browne tract, to Camino de Buena Vista, near Holly Beach; 3.6 mi. Olmito-North road, from San Jose Ranch road northward, along east line of Shure 15; 4.9 mi. San Jose Ranch road, from San Benito-Rio Hondo pavement, to Browne tract; 8 mi. East Browne tract bld., from Fresnal road to Rio Hondo east road; 2.2 mi. Rio Hondo east road, from San Benito-Rio Hondo pavement to East Browne tract bld.; 3.7 mi. Zilloek Ranch road, from Highway No. 12, northward

of Lateral "T" to Lateral "U"; R. A. Thompson, State Highway Engr.

Tex., Canyon—Randall County, B. F. Fronabarger, Judge, plans 8.208 mi. grading and bridges, Highway No. 9; R. E. Dyatt, Engr.

Tex., Center—Shelby County, F. C. Powell, County Judge, plans road building, cost \$200,000. See Financial News—Bond Issues Proposed.

Tex., Childress—Childress County, W. B. Howard, County Judge, plans improving various roads, including hard-surfacing Highway No. 5, connecting with Hardeman County highway on east to Hall County line on west; Highway No. 4, from Cottle County line on south to Collingsworth County line on north. See Financial News—Bond Issues Proposed. 12-15

Tex., Cold Springs—San Jacinto County, Wm. McMurray, Judge, plans 13,480 mi. grading and bridges, Highway No. 35, between Polk County line and Liberty County line; D. K. Caldwell, County Engr.

Tex., Crockett—Houston County, Leroy L. Moore, Judge, plans 8.546 mi. grading and bridges, Highway No. 21, from Crockett to east line Road Dist. No. 3; F. J. Vom Zuben, Engr.

Tex., Edinburg—Hidalgo County Commrs., plan road building in Mission Road Dist. No. 5; cost \$1,000,000. See Financial News—Bond Issues Proposed.

Tex., Edinburg—Hidalgo County, W. D. Chadwick, County Commr., plans additional road building, cost \$5,000,000. See Financial News—Bond Issues Proposed.

Tex., Fort Worth—City, O. E. Carr, Mgr., plans paving 5 streets: New York, East Fifth, Hattie, Parkdale Ave. and East Mulkey.

Tex., Fredericksburg—Gillespie County plans completing asphaltizing Macon Highway. Address County Commrs.

Tex., Goliad—Goliad County Commrs., Court, J. A. White, Judge, receives bids Jan. 18 for 18 mi. Davy-Yorktown-Goliad County highway in western section of county, from north to south.

Tex., Groesbeck—Limestone County, H. F. Kirby, County Judge, plans 2,162 mi. concrete, Highway No. 7, Nagle-Witt-Rollins-Gilchrist, County Engrs., Allen Bldg., Dallas.

Tex., Happy—City Comm., plans paving main street.

Tex., Houston—Harris County, Norman Atkinson, Judge, receives bids about Jan. 25 for 10.4 mi. 20-ft. concrete pavement, Galveston Road to Harris County line; cost, about \$400,000; A. J. Wise, County Engr.

Tex., Houston—City, George Woods, Mgr., received low bid from Gulf Bitulithic Co., 701 Foster Bldg., at \$35,480 for permanent paving on Dennis Ave. from Genessee to Milam St.

Tex., Houston—Harris County, Norman Atkinson, County Judge, plans receiving bids soon for 10 mi. road from South Houston to Webster; A. J. Wise, County Engr.

Tex., Houston—Harris County, Norman Atkinson, Judge, plans 2 roads: 10.374 mi. concrete, Highway No. 6, Houston-Galveston road; 14,507 mi. grading, bridges and concrete, Highway No. 6; A. J. Wise, County Engr.

Tex., Houston—Harris County, Norman Atkinson, County Judge, received low bid from Wilson & Johnson at \$36,355 for 4¼ mi. Main Street road, from city limits to West Junction; receives bids later for paving; A. J. Wise, County Engr.

Tex., Houston—Harris County Commrs., Norman Atkinson, Judge, received low bids from Brown & Root, Post-Dispatch Bldg., for 2 roads: Lawndale Ave., from Lawndale Ave. Bridge to Broadway, Harrisburg, \$26,699; 20 mi. West Montgomery or Yale Street road, \$45,678; W. L. Washburn, County Auditor. 18-2

Tex., Huntsville—Walker County, P. H. Singletary, Judge, plans 12.03 mi. grading and bridges, Highway No. 19; D. K. Caldwell, County Engr.

Tex., Lamesa—City plans 13 blocks brick paving on natural base, on North and South First St. to Bryant St. Address City Clk.

Tex., Panhandle—Carson County, A. A. Callaghan, Judge, plans grading and bridges on 2 roads, Highway No. 75: 10.057 mi. and 10.700 mi.; Larry C. Cox, Engr.

Tex., Raymondville—Willacy County, W. H. Mead, Judge, plans road building; cost \$650,000. See Financial News—Bond Issues Proposed.

Tex., San Antonio—Bexar County Commrs., receive bids Jan. 11 for ¼, ½ and ¾ in. natural limestone rock asphalt topping on Hutchins St., Terrell Wells Addition; G. H. Collins, Engr.



Tex., Texas City—City, E. L. Noble, Mayor, plans letting contract to pave Third St. between Eleventh Ave. and First Ave. North.

Tex., Yoakum—City plans street paving. Address City Clk. See Financial News—Bond Issues Proposed.

Virginia—State Highway Comm., H. G. Shirley, Chmn., Richmond, receives bids Jan. 17 for road and 2 bridges: Campbell County—Route 14, 586-ft. bridge across Staunton River between Lynchburg and Danville at Atlavista; two 150-ft. and two 75-ft. steel truss spans; three 40-ft. concrete spans; Bland County—Route 26, 207-ft. steel and concrete bridge across Wolf Creek near Rocky Gap; 120-ft. steel truss and two 40-ft. concrete beam spans; York County—Route 391, 1.9 mi. concrete roadway from Yorktown; plans on file; S. C. Mullen, State Highway Engr.

Va., Richmond—City, R. Keith Compton, Director of Public Works, proposes smooth paving Marshall St., from Viaduct to Monroe; cost \$75,000.

W. Va., Parkersburg—Wood County Commrs. plan improving 6 roads in Walker Dist.; cost \$79,500. See Financial News—Bond Issues Proposed.

#### Contracts Awarded

Alabama—State Highway Comm., Woolsey Finnell, Highway Director, Montgomery, let contracts for 10 roads and bridges; Escambia County—14.08 mi. grading and draining, Brewton to Covington County line, Gillis Construction Co., Brewton, \$81,165; timber bridges, Penton & Mathis, Florida, \$106,009; 9.83 mi. Brewton to Conecuh County line, Gillis Construction Co., \$44,975; steel and concrete bridges, Brewton, C. B. Cox, Canton, \$27,649; Dale and Houston Counties—16.62 mi. sand clay road, Dothan to Choctawhatchee River, Brantley & Crowe, Banks, \$71,268; timber bridges, Jim Graham, Montgomery, \$33,262; Dale and Coffee Counties—9.21 mi. grading and draining, Enterprise to Choctawhatchee River, Houston Foster, Laverne, \$55,206; timber and concrete bridges, Austin Brothers Bridge Co., 119 Mickleberry St., Atlanta, Ga., \$58,792; Washington County—6.76 mi. grading and draining, Fruitdale to Mississippi State line, Gaston and Gerrish, Gastonburg, \$33,590; Cherokee County—13.47 mi. grading and draining, Center to Georgia State line, via Cedar Bluff, Newell Contracting Co., Martin Bldg., Birmingham, \$78,748; timber bridges, \$66,078; Tuscaloosa County—16.48 mi. grading and draining, Northport to Pickens County line, W. C. Shepherd, Citizens and Southern Bank Bldg., Atlanta, Ga., \$159,104; concrete and timber bridges, Ed. Pettus, Montgomery, \$63,632; 7.65 mi. chert surface, Woodstock to Jefferson County line, J. B. Tirner, Columbiana, \$25,050; Shelby County—10.72 mi. grading and draining, Calera to Columbiana, W. C. Shepherd, Atlanta, \$82,663; Jefferson County—7.37 mi. chert surfacing, from Argo toward Birmingham, J. W. Gwin, Age-Herald Bldg., Birmingham, \$28,740. 11-24

Ala., Atmore—City let contract to Intra-State Contracting Co., Brewton, at \$45,000, to pave Nashville St.

Ala., Birmingham—City, Eunice Hewes, Clk., and Jefferson County Board of Revenue, C. J. Rogers, Engr., let contracts to pave 2 roads: Road, connecting North and South Bessemer Highways, near Powderly, with 2-in. asphalt surface on 5-in. concrete base, Dunn Construction Co., Inc., Chamber of Commerce Bldg., \$18,688; Ave. V, at Forty-eighth St., and South Park road, with 2-in. bitulithic top, 6-in. concrete base, Southern Roads Co., Pioneer Bldg., \$37,039. 12-22

Fla., Pensacola—Escambia County Commrs. let contract to J. A. and A. B. Mason, Atmore, at \$15,875, for 22 mi. grading and hard surfacing Molino-Atmore Highway, from Pensacola-Flomaton Highway near Molino to Alabama line south of Atmore; W. E. Wheat, County Engr. 12-8

Georgia—State Highway Board, John N. Holder, Chmn., Atlanta, let contract for 8 roads and 7 bridges: Bartow County—bridge between Kingston and Rome, Brooke-Darden Co., Atlanta, \$614; Chattooga County—bridge between Summerville and Rome, Latimer & Peaks, Columbia, S. C., \$29,968; Dawson County—9 mi. grading between Tate and Dawsonville, Wallace Construction Co., 101 Marietta St., Atlanta, \$137,001; Fannin County—culvert and bridges between Blue Ridge and Blairsville; W. J. Tidwell, Macon, \$18,293; Gilmer County—12 mi. grading, between Ellijay and Blue Ridge, Nichols Contracting Co., 1281 La France St. N. E., Atlanta, \$214,415; Hipp & Sims, Ellijay, \$58,267; Gordon County—bridge between Calhoun and Dalton, Brooke-Darden Co., \$15,460; 11 mi. grading, between Fairmount and Chatsworth, W. C. McCoy, La Fayette, Ala., \$83,801; E. M. Williams, Monroe, Ga., \$8967; Habersham County—13 mi. paving, Clarks-ville to Clayton, Hardaway Contracting Co.,

First Natl. Bank Bldg., Columbus, Ga., \$307,423; Hall County—5 mi. topsoil, between Gainesville and Jefferson, H. T. Mozeley, Toccoa, Ga., \$29,865; Hart County—4 mi. concrete, Hartwell to Athens, Louis des Cognets, Louisville, Ky., \$89,961; Lumpkin County—bridge, between Blairsville and Dahlonega, J. B. McCrary Co., Atlanta, \$25,130; Pickens County—9 mi. grading between Tate and Dawsonville, M. R. Woodsall, Walton Bldg., Atlanta, \$91,426; J. H. Kerlin, Atlanta, \$42,147; Rabun County—10 mi. paving, between Clarksville and Franklin, W. H. Anderson, Medical Bldg., Asheville, N. C., \$307,758; Whitfield County—bridge between Dalton and Ringgold, Brooke-Darden Co., \$7905; bridge between Calhoun and Dalton, Brooke-Darden Co., \$7060. 12-8

Georgia—State Highway Board, John N. Holder, Chmn., Atlanta, let contracts for 13 roads and 6 bridges: Appling County—11 mi. asphalt paving between Vaxley and Lyons, William P. McDonald Co., New York, \$178,016; Bacon County—10 mi. asphalt paving, Waycross to Hazlehurst, C. R. Scott, Leesburg, \$150,280; Bacon-Applying Counties—12 mi. asphalt, Waycross to Baxley, Morgan Hill Paving Co., Graham Bldg., Jacksonville, \$189,092; Brantley County—16 mi. gravel road, Waycross to Brunswick, Broadbent Construction Co., Ocala, Fla., \$63,644; Burke County—10 mi. paving, between Waycross and Swainsboro, J. W. Gwin, Age-Herald Bldg., Birmingham, Ala., \$226,915.

In Cobb County—bridge between Cartersville and Atlanta, J. H. Kerlin, Atlanta, \$7082; Daugherty County—14 mi. paving between Albany and Sylvester and Albany and Dawson, Interstate Construction Co., Independent Bldg., Nashville, \$13,529; Elbert County—bridge between Comer and Elberton, George H. Sparks, East Point; Emanuel County—20 mi. grading between Swainsboro and Savannah, Wallace Construction Co., 101 Marietta St., Atlanta, \$93,073, and W. C. McCoy, Lafayette, Ala., \$14,724; Gwinnett-Walton Counties—8 mi. top soil and grading, between Snealville and Loganville, Nichols Contracting Co., 1281 La France St. N. E., \$60,331; Houston County—13 mi. concrete between Perry and Cordele, Whitley Construction Co., LaGrange, \$268,784.

In Jackson County—bridge between Winder and Jefferson, B. H. Holz, Atlanta, \$27,221; Laurens County—13 mi. grading between Savannah and Dublin, Clarke Construction Co., Louisville, Ga., \$48,527; Newton-Wallace Counties—9 mi. grading between Covington and Madison, E. G. Martin, Covington, Ga., \$36,913; Turner County—bridge between Cordele and Tifton, R. G. Christian, Americus, \$5240; Wayne County—4 mi. grading and bridges between Ludowici and Jesup, T. T. Sweet, 302 S. W. North River Dr., Miami, \$79,075; Cobb County—bridge between Cartersville and Atlanta, Austin Brothers Bridge Co., 1195 Mickleberry St. S. W., Atlanta, \$14,831.

Md., Baltimore—City, N. L. Smith, Highways Engr., let contract to P. Flanigan & Son, Twenty-fifth St. and Harford Road, at \$36,188, to grade, curb and pave with 7080 sq. yd. sheet asphalt on 6-in. concrete base in Cont. No. 443; to American Paving & Contracting Co., Montebello Ave. and B. & O. R. R., at \$58,343, to grade, curb and pave with 13,430 sq. yd. sheet asphalt on concrete base in Cont. No. 444; to P. Flanigan & Sons, at \$44,673, to grade, curb and pave with 10,700 sq. yd. 1½-in. sheet asphalt topping, 6-in. concrete base, 1½-in. binder course, in Cont. No. 445. 12-1, 12-8, 12-15

Mo., Clayton—City, Alfred H. Kerth, Clk., let contract to John S. Stenby, 473 Van Buren St., Kirkwood, for sidewalks on Demun St., from Hillcrest suburb to Wydown Blvd. 12-8

N. C., Asheville—City Comm., let contract to Gambill Construction Co., Technical Bldg., to grade grounds of Burton Street school.

Okla., Shawnee—Pottawatomie County Commrs., reported, let contracts for 2 roads: 7800 cu. yd. West Highland road, Project 11, Ellis & Lewis, Muskogee; 19,000 cu. yd. Maude-Wye road, Project 9, R. L. Davis, Madill, \$41,237.

Okla., Snyder—City, reported, let contract to Highway Construction Co., Kennedy Bldg., Tulsa, at \$26,218 for 6960 sq. yd. grading and 6-in. concrete paving.

Tenn., Madisonville—Monroe County Commrs. let contract to Walters & Prater, White Pine, Tenn., for 18 mi. grading and 48 mi. macadam, chert or gravel on various roads in county.

Tex., Big Spring—City, W. V. Montan, Mgr., let contract to Carl Pleasant Construction Co., Kirkwood, for sidewalks on DeMun St., from Hillcrest suburb to Wydown Blvd. 12-8

Tex., Brackettville—Kinney County Commrs.

Court, John H. Stadler, Judge, let contract to C. W. Stone, Del Rio, for 2.77 mi. grading and surfacing, Brackettville-Rock Springs road; H. W. Hutson, Engr. 12-8

Tex., Brownsville—City let contract to Southwest Bitulithic Co. for street paving, extending paving to full width of streets, placing 1½-in. asphalt on central section; to Dodds & Wedegartner, San Benito, to extend paving to connect with Parades Road.

Tex., Galveston—City, E. H. Ivey, Commr. of Streets, let contract to W. A. Kelso, 2215½ C St., at \$20,837, to pave Twenty-sixth St., Broadway to Ave. N. 11-10

Tex., Haskell—City let contract to Tibbitts Construction Co., Houston, for 20 blocks paving. Address City Clk.

Tex., Houston—Harris County Commrs., Norman Atkinson, Judge, let contract to Brown & Root, Georgetown, at \$26,000 for macadam base, asphalt surface on Londale Ave., from city limits at Brays Bayou to Galveston road; A. J. Wise, County Engr.

Tex., Houston—Harris County Commrs., Norman Atkinson, County Judge, let contract to Wilson & Johnson for grading and draining and bridge over Brays Bayou and 3.7 mi. Old Spanish Trail, from Main St. to point near West Junction.

Tex., Mission—City let contract to McElwrath & Co., Corsicana, for 8 blocks additional paving.

Tex., San Benito—City let contract to Dodds & Wedegartner for 18-ft. paving from Seventh and Pierce St. to city limits.

W. Va., Terra Alta—City plans improving streets and extending sewer lines. Address City Clk.

#### Sewer Construction

**Sewer construction in LAND DEVELOPMENT projects involves the expenditure of large sums of money. Under that classification details of these improvements are reported.**

Ark., Fort Smith—City, J. H. Parker, Mayor, receives bids after first of year for storm sewers and paving, cost \$400,000; 3100 ft. of 4-ft. sewer and 1300 ft. of 3-ft. sewer, 5 miles of paving and parks and playgrounds; bonds voted; W. H. Evans, City Engr.

D. C., Washington—District Commrs. receive bids Jan. 10 for sewers. See Want Section—Bids Asked.

Md., Baltimore—John Matticclani, 229 S. Exeter St., has contract at \$61,856 for extension sanitary sewers and drains. 12-8

Md., Baltimore—Board of Awards receives bids Jan. 11 for sewer pipe. See Want Section—Bids Asked.

Miss., McComb—F. D. Harvey & Co., reported, has contract for sewers; W. S. Dickey Clay Mfg. Co., N. Y. Life Bldg., Kansas City, Mo., for furnishing material; Fairbanks Morse & Co., 900 S. Wabash Ave., Chicago, for sewer pumps.

Mo., Kansas City—Matthew S. Murray, Director of Public Works, reported, let contract to Whitmire Construction Co. at \$26,508 for combined storm and sanitary sewer and to T. M. Walsh at \$26,899.

Okla., Fort Cobb—See Water Works.

Okla., Shawnee—City, reported, has preliminary plans for sewers. Address The Mayor.

Tenn., Chattanooga—Department of Streets and Sewers, reported, expend \$500,000 during 1928 for sewers; R. H. Croix, Commr.

Tenn., Knoxville—Alex Harris, City Service Director, reported, recommended expenditure of \$2,300,000 for sewers.

Tenn., Springfield—See Roads, Streets, Paving.

Tex., Alpine—City, reported, let contract to H. G. Armistead, El Paso, for sanitary survey of city preparatory to extending sewer and water mains.

Tex., Arlington—See Roads, Streets, Paving.

Tex., Fort Sam Houston—Walsh-Burney & Moore, 928 N. Flores St., San Antonio, reported, low bidder for 3300 ft. of sanitary sewers.

Tex., San Antonio—Walsh, Burney & Moore, Plaza Hotel, have contract for 21,000 ft. of 8-in. and 1500 ft. of 10-in. concrete pipe, cost \$21,476. 12-15

Tex., Sonora—City, W. C. Gilmore, Mayor, receives bids Jan. 6 for materials for sewer. See Want Section—Bids Asked.

Tex., Yoakum—City voted sewer bonds. See Financial News—Bond Issues Proposed.

Va., Lynchburg—City, R. W. B. Hart, Mgr., reported, let contract to Adams Brothers-Paynes Co., 1760 Park Ave., for clay pipe.

W. Va., Huntington—City receives bids Jan. 9 for lateral sewers. See Want Section—Bids Asked.

W. Va., Huntington—Board of Commrs. receives bids Jan. 16 for storm and sanitary sewers on South Side.

W. Va., Parkersburg—John W. Curry & Son, reported, have contract for sewers.

W. Va., Terra Alta—See Roads, Streets, Paving.

### Telephone Systems

Fla., Jacksonville—Southern Bell Telephone & Telegraph Co., main office Atlanta, Ga., reported, plans expending about \$2,023,000 in State of Florida during year 1928.

Ga., Atlanta—Expansion of Southern Bell Telephone and Telegraph Co. in Southeastern States during year of 1928, reported, will involve expenditure of \$27,000,000 in construction and replacements; projects in Tennessee require about \$5,538,000; in Georgia about \$4,253,000; Louisiana about \$3,893,000; Alabama about \$2,842,000; Kentucky \$2,165,000; North Carolina \$3,495,000; South Carolina \$1,120,000.

Mo., St. Louis—Southwestern Bell Telephone Co., reported, plans construction program involving about \$36,000,000 during 1928 in Arkansas, Missouri, Kansas, Oklahoma and Texas.

N. C., Boone—Southern Bell Telephone and Telegraph Co., Atlanta, Ga., reported, filed application to purchase telephone properties of Watauga Telephone and Telegraph Co.

N. C., Greensboro—Southern Bell Telephone and Telegraph Co., main office Atlanta, Ga., plans erecting \$80,000 exchange building; reinforced concrete, built-up roof, concrete and terrazzo flooring; Marye, Alger & Vinour, Archts., Walton Bldg., Atlanta, Ga.

S. C., Walterboro—Continental Telephone Co., St. Paul, Minn., reported, acquired the Colleton County Telephone Co.; O. C. Knell of Sumter in charge of operation. 12-29

Tex., Elgin—Southwest Telephone Co., 305 Rector Bldg., Little Rock, Ark., reported, acquired local exchange of Elgin Telephone Co.; company has 92 exchanges in Arkansas, Texas and Oklahoma; make improvements within next six months; W. S. Pedley, Acting Gen. Mgr. 10-20

Tex., Port Arthur—Southwestern Bell Telephone Co., main office St. Louis, Mo., reported, plans expending \$50,000 of extensions; include extension line to the Griffing addition; F. D. Adams, local Mgr.

Tex., San Marcos—Kellogg Switchboard & Supply Co., 1066 W. Adams St., Chicago, Ill., has contract for installation of equipment for new central office building of San Marcos Telephone Co.; Geo. L. Kennedy, Contr.; David C. Donaldson, Archt. 12-29

### Textile Mills

Ala., Albertville—Civitan Club, J. M. Davis, Pres., advises: "Have assurance of 10,000 spindle weaving mill; it is being promoted by Alabama Power Co., Birmingham, and is being financed by Caldwell & Co., Nashville, Tenn., and Roberts & Co., Inc., Atlanta, Ga., and we have sold \$150,000 preferred stock locally; mill is to be under construction about Feb. and in operation by Sept. this year."

Ala., Sylacauga—Mignon plant of Avondale Mills, reported, equip yarn mill for producing cloth; install 128 looms.

Ark., Little Rock—Business Men's Industrial Committee, George W. Donaghey, Chmn., 2109 Gaines St., reported, interested in establishment of cotton waste mill.

Miss., Fayette—Chamber of Commerce, reported, interested in establishment of textile mill.

N. C., Bennett—Bennett Hosiery Mills, capital \$10,000, incorporated; W. C. Brewer; manufacture men's half hose; has building; will equip with 50 knitting machines.

N. C., Gastonia—Hanover Mills, Inc., capital \$339,000, incorporated; L. S. Rankin, W. Sixth Ave.; Geo. B. Mason, N. Cherry St.

N. C., Greensboro—Proximity Mfg. Co. will let contract Jan. 9 for new unit at Proximity Cotton Mills; J. E. Serrine & Co., Engrs., Greenville, S. C. 12-29

N. C., Wadesboro—West Knitting Corp., capital \$250,000, incorporated; Charles H. West, J. D. Rivers.

N. C., Wadesboro—J. T. Whelden, Sec. Chamber of Commerce, wires: "West Knitting Corp., Syracuse, N. Y., has acquired a 3-acre site; plans for mill being drawn and construction of large 2-story, brick, mill type building and basement will begin within next few weeks; manufactures men and boys ribbed underwear and woman's rayon underwear; machinery for plant will be moved from Syracuse and installed as soon as build-

ing is ready; production should begin about April 1."

S. C., Clinton—Clinton Cotton Mills, reported, install 11,000 spindles.

S. C., Spartanburg—Powell Knitting Co. has plans in progress by Lockwood, Greene & Co., Engrs., Spartanburg, for erection of \$100,000 mill unit; brick walls, concrete footings, wood and concrete floors, built-up roof. 12-8

Tenn., Charleston—Chamber of Commerce, D. E. Mackey, Chmn., reported, interested in establishment of silk weaving plant.

Tenn., Franklin—Franklin Rayon Mills, Inc., capital \$65,000, organized; Harry Altman, Samuel Denmark, Phillip Sears; manufacture cloth for women's dresses and men's underwear, etc.; plant will be located in building now being remodeled; Sidney M. Edelstein & Co., Union, S. C., engineers in charge of installation.

Tenn., Knoxville—Knoxville Cotton Mills, reported, erecting brick annex, 60x100 ft., 2 stories; is remodeling recently acquired property; expansions will give 42,000 additional sq. ft. floor space; will install knitting department; cost \$100,000. 11-3

### Water Works

Details of water works improvements in connection with the many LAND DEVELOPMENT operations will be found under that classification.

Ala., Calera—City, reported, plans water works system. Address The Mayor.

Fla., Melbourne—Jos. Reinerton, 901 E. Washington St., Orlando, reported, has contract for water works extension; city let subcontracts to American Cast Iron Pipe Co., Birmingham, Ala., for Mono-cast iron pipe lined with cement; valves and hydrants from M. & H. Valve Co., Anniston.

Fla., St. Petersburg—City votes Feb. 14 on bonds for soft water supply system. See Financial News—Bond Issues Proposed.

Ky., Harlan—North American Water Works Co., 11 Broadway, New York, reported, plans installation of \$125,000 water system; Howard K. Bell, Lexington, Const. Engr. 12-15

La., Lake Charles—Board of Commrs. of Lake Charles Harbor and Terminal District, reported, let contract to Murray-Brooks Hardware Co., for water pipe and connections.

Md., Williamsport—Board of Water Commrs. receives bids Jan. 16 for pipe. See Want Section—Bids Asked.

Mo., Cabool—City, reported, appointed A. Harney Kendrick consulting engineer for \$40,000 water works plant and system, including deep well, with large pumps, elevated steel tank, concrete reservoir and distribution system.

Mo., Columbia—Sewell Well Co., 1627 Locust St., St. Louis, reported, has contract for sinking well at city water and light plant.

N. C., Franklin—City defeated water works bonds. See Financial News—Bond Issues Proposed.

N. C., Hickory—City receives bids Jan. 18 for water works improvements. See Want Section—Bids Asked.

Okla., Ada—City, Lee Daggs, Clk., will call for bids in Jan. on new work and extension to water works; cost \$425,000; work includes 24-in. cast-iron or concrete pipe, 11 miles of flow line, 10 blocks of paving; Black & Veatch, Engrs., Mutual Bldg., Kansas City, Mo. 12-22

Okla., Anadarko—Cullum Construction Co., Central Bank Bldg., Dallas, Tex., reported, has contract for fire hydrants and valves.

Okla., Chickasha—City, C. A. Dearman, Mayor, reported, plans water work improvements.

Okla., Clinton—City voted \$600,000 bonds for water works extension. Address The Mayor.

Okla., Chickasha—E. W. Baker, Perrine Bldg., Oklahoma City, reported, plans extending water mains.

Okla., Erick—City, reported, plans water works extension. Address The Mayor.

Okla., Fort Cobb—City voted water and sewer bonds; Wood Engineering Co., Engrs., Oklahoma City. 12-22

Okla., Tulsa—See Miscellaneous Enterprises.

Tenn., South Fulton, Mail Fulton, Ky.—City, reported, will install water plant; cost \$23,000; soon receive bids.

Tex., Abilene—City, reported, let contract to American Cast Iron Pipe Co., Birmingham, Ala., at \$85,801, for laying 22,738 ft. of 20-

in. cast iron pipe line from Lake Kirby to city's water works system. 12-8

Tex., Frankston—City, M. E. Cook, Mayor, reported, negotiating with Fowler & Koch, Dallas, for franchise.

Tex., Noonan—A. Y. Walton receives bids Jan. 25 for wood stave pipe, etc. See Want Section—Bids Asked.

W. Va., Benwood (Branch Wheeling)—City, reported, considering bond election for water plant; C. C. Smith Sons, City Engrs.

### Woodworking Plants

Fla., Jacksonville—Jacksonville Furniture Manufacturing Co., Guy L. Goldsmith, Pres., 2001 Main St., reported, establish plant to manufacture cane and living room furniture.

La., New Orleans—Roseland Box Co., Inc., Alonzo McCraney, Pres., offering \$150,000 first mortgage 7% serial gold bonds through Canal Bank & Trust Co., 201 Baronne St. and Sutherland, Barry & Cleaver, Inc., 339 Carondelet St.; purpose of issue to provide for rebuilding and enlarging plant, installing new machinery and equipment and for other corporate purposes; The Roseland Box Co., Inc., incorporated under laws of Louisiana owns and operates business of Roseland Veneer & Package Co., Ltd., whose plant was partially destroyed by fire in 1926; rebuilding of properties now practically completed; manufacture hampers, crates, containers, etc.

Mo., Kansas City—Imperial Casket Co., 1415 St. Louis Ave., T. R. Snyder, Pres., reported, acquired site 75x162 ft. on Wyoming St. for factory building.

N. C., North Wilkesboro—American Furniture Co., capital \$100,000, incorporated; A. B. Johnston, R. W. Gwyn, J. R. Hix.

Tenn., Martin—Nants & Co., R. A. Nants, Pres., Live Oaks, Fla., purchased City Lumber Co.'s plant and machinery from A. S. Johnson; will erect crate factory to manufacture crates and hampers. See Want Section—Machinery and Supplies. 12-29

N. C., Goldsboro—Wayne Furniture Manufacturing Co., reported, purchased 1000 acres gum and cypress timber and secured option on 4000 to 5000 acres in Gosden Swamp section Duplin County.

### FIRE DAMAGE

Ala., Birmingham—Student Activities Building at Birmingham-Southern College; loss \$150,000.

Ark., Clarksville—Tipple of the Igo Mines in Spadra Field; owned by Nat and Tom Clark and Andy Ward.

Ark., Gurdon—Wright Theater, owned by F. E. Wright; loss \$10,000.

Ark., Helena—Methodist Church parsonage, Rev. P. Q. Rorie, Pastor.

Ark., Hoxie—Clyde Webb's residence, Methodist Church and parsonage, and 5 additional dwellings; loss \$40,000.

Ark., Little Rock—Store of Southern Seed Co., 104 E. Markham St.; loss \$15,000.

Ark., Ola—Stores of A. L. George and Miss Lela James; loss \$20,000.

Ark., Paragould—G. L. McDonald's residence; loss \$7000.

Ark., Pine Bluff—Dormitory at Negro Boys' Industrial School, T. W. Coggs, Supt.; loss \$12,500.

D. C., Washington—Kensington Apartments, 2501 Fourteenth St. N. W., owned by Samuel D. Harrison.

D. C., Washington—Dr. Jas. T. Johnson's residence; loss \$40,000.

D. C., Washington—Air Corps and Quartermaster's warehouse at Bolling Field; loss \$500,000.

Fla., Jacksonville—E. C. Flesher's residence, Atlantic Blvd.

Fla., Laurel—Stores of A. L. Puckett and M. B. Hester; Mr. Hester's residence; loss \$15,000.

Fla., Sanford—Presbyterian Church, Rev. R. C. Gilmore, Pastor; loss \$50,000.

Ga., Athens—Miss Millie Rutherford's residence.

Ga., Atlanta—Clifford Walker's residence, 60 Prado.

Ga., Atlanta—Dr. H. R. Donaldson's residence, 984 Euclid Ave.; also vacant dwelling owned by Mrs. L. V. Sprayberry.

Ga., Brunswick—J. S. Gordon's residence, 1719 Gordon St., and adjoining dwelling occupied by Mose Daniels.

Ga., Fort Gaines—School building; loss \$25,000. Address School Board.



Ga., Forsyth—Portion of buggy shop owned by McComan and Hardin.

Ga., Macon — Al Shihah Shrine Temple quarters in old Newman Bldg., First and Poplar Sts.; loss \$15,000 to \$25,000.

Ky., Ashland — Clubhouse of Bellefonte Country Club; loss \$75,000.

Ky., Greensburg—Graded and High School building; loss \$40,000; address School Board.

Ky., Jackson—Residences of John Stamper, Prof. C. A. Leonard, H. B. Parker, T. A. Collier and W. M. Bailey; Leonard residence owned by N. B. Combs; loss \$30,000.

Ky., Shepherdsville—General store and 5 warehouses of Troutman Brothers, care C. F. Troutman; loss \$200,000.

La., Alexandria—National bakery conducted by Philip Scaifano, Lee St.; building owned by Frank Velotta.

La., Bastrop—School building in Ward 3 on Monroe-Bastrop highway. Address Morehouse Parish School Board.

La., Opelousas—St. Landry Wholesale Grocery Co.'s storage warehouse and candy factory on Vine St.

Miss., Biloxi—Biloxi Laundry owned by Eugene Dowling; Tomann Self Service Grocery Co.; loss \$50,000.

Miss., Clarksdale—R. N. McWilliams' residence near Clarksdale; loss \$50,000 to \$100,000.

Miss., Decatur—School building; address Newton County School Board; loss \$25,000.

Miss., Indianola—J. C. Barnd's residence, Johnsonville, near Indianola.

Miss., Pascagoula—H. M. Flechas' residence and 3 adjoining cottages owned by E. J. Ford and Mrs. I. P. Ford, loss \$12,000.

Miss., Wiggins—Building of Stone County Enterprise Co., publishers, owned by O. L. Bond; Chester J. Parks' bakery; Earl Bond's grocery; loss \$25,000.

Mo., Lancaster—Ray Clark's residence; loss \$12,000.

N. C., Albemarle—Methodist Protestant Church; loss \$15,000; Rev. J. R. Anderson, Pastor.

N. C., Brevard—Wm. McK. Fetzer's residence.

N. C., Monroe—Union Drug Co., Monroe Enquirer, Monroe Hardware Co., and others; loss \$350,000.

N. C., Pomona—Graded School building; loss \$13,500; E. D. Broadhurst, Chmn., Guilford County School Board, Greensboro.

N. C., Washington—Portion of plant of Crystal Ice and Coal Co.

Okla., Hugo—Blount Bros. Boston Store, H. Goldfeder's People's Store, Landau's Star Store, Jordan's Hugo Drug Store, Liberty Theater; loss \$200,000.

Tenn., Butler—Butler Hotel, I. E. Shupe, owner and manager; loss \$30,000.

Tenn., Woodbury—Harris Dry Goods Store owned by S. C. Harris; loss \$30,000.

Tex., Bryan—Mrs. J. O. Chance's residence; loss \$10,000.

Tex., Dallas—Hedgecock Artificial Limb and Brace Co.'s plant, 1306 Commerce St.

Tex., Denton—Barn at Trinity Farms, Denton County; W. D. Sharp, Mgr.; loss \$10,000 to \$12,000.

Tex., Houston—Store and residence of Joe Petronella, 1420 Matthews St.

Tex., Lufkin—L. W. Alberry's residence; loss \$12,000.

Tex., Naylor—Cotton gin operated by W. E. Davis; loss \$15,000.

Tex., Nederland — Nederland Pharmacy; loss \$25,000.

Tex., Tyler—Kiss Brothers Cafe, owned by Mrs. R. Bergfeld; Hub Dry Goods Co., owned by Albert Pabst, 1601 H St., Galveston; loss \$20,000.

Va., Hopewell—Grand Central Hotel; address The Propr.

Va., Alexandria—Grocery store of F. B. Howard & Co., at S. W. corner King and Washington Sts.

Va., Danville—Seminole Apartments, owned by T. T. Adams; loss \$30,000.

Va., Falls Church—Wm. Leake's residence, Wilson Blvd., near Falls Church.

Va., Farmville — L. Legus cleaning and pressing plant.

Va., Front Royal—Afton Inn Hotel; loss \$10,000.

W. Va., Gladys—Depot of Western Maryland Railroad; H. R. Pratt, Ch. Engr., Baltimore, Md.

W. Va., Glenville—Post office, Mrs. Dora Roberts, Postmistress; Glenville Pathfinder printing plant, Glenville Laundry, Camden Roach's barber shop and beauty parlor; loss \$15,000.

W. Va., Horner—S. R. & B. M. Hill's general store, feed store, residence and barn; loss \$10,000.

ground, Floyd and Jacob Sts., as site for \$250,000 synagogue. 9-22

La., Scott—Roman Catholic Church, Rev. Jos. E. Montelaird, Pastor, erect \$25,000 hollow tile, frame and stucco church; concrete foundation, wood floors, slate roof; Wm. R. Burk, Archt., Balter Bldg., New Orleans.

Md., Baltimore—SS. Phillip and James' R. C. Church, Father John E. Wade, Pastor, considering bids on \$500,000 building, 29th and Charles Sts.; steel and rein. concrete, limestone exterior, vaulted interior, marble floors, orna. tile roof, vacuum heating, seat 925; sacristies, choir room; Theo. Wells Pietsch, Archt., American Bldg.; Hermann Eisert, Mech. Engr., 321 N. Charles St.; Henry Massart, Struct. Engr., 328 North Charles. 8-19-26

Miss., Okolona—Methodist Church, J. C. Crabtree, Chmn., Bldg. Comm., erect addition.

Mo., Kansas City—Maurice Carroll, Archt., 713 Linwood Blvd., completed plans for \$100,000 parish house.

Mo., Kansas City—Monroe Avenue Baptist Church has permit for \$22,000 building, 3620 E. 39th St.

N. C., Sanford—St. Thomas P. E. Church laying foundation for building, N. Steel St.

N. C., Spindale—Spencer Baptist Church, Rev. M. M. Huntley, Pastor, erect \$10,000 building; material on site.

Tenn., Nashville — Immanuel Baptist Church, Dr. P. W. James, Pastor, 303 Chesterfield Ave., selected Hart, Freeland & Roberts, Independent Life Bldg., as architects for brick, stone and concrete Sunday School; 2 stories and basement. 12-22

Tex., Beaumont—Livesay & Wiedemann, Archts., 607 San Jacinto Life Bldg., reported, drawing plans for \$180,000 church.

Tex., Mission—First Christian Church plans building. Address The Pastor.

Tex., Pampa—First Baptist Church erect \$100,000 building. Address The Pastor.

Tex., Tenaha—First Methodist Church soon let contract for brick veneer building; 1 story and basement, main auditorium seat 300, classrooms. Address The Pastor. 10-20

Va., Roanoke—First Baptist Church, C. S. Churchill, Chmn., Bldg. Comm., completing excavation for \$350,000 building, S. Third St.; plans being prepared by Frye & Stone, Archts., MacBain Bldg., Roanoke, in consultation with P. E. Burroughs, head of architectural dept. of Sunday School Board, Southern Baptist Convention, Nashville, Tenn. 10-20

### City and County

D. C., Washington—President signed first deficiency bill providing funds for new quarters for House of Detention.

La., New Orleans—City Council appropriated \$20,000 for branch library in Carrollton.

Miss., Carthage — Leake County defeated \$80,000 courthouse bonds; N. W. Overstreet, Archt., Miss. Fire Bldg., Jackson. 12-22

Mo., Columbia—City votes Feb. 7 on \$200,000 city hall bonds; Eckel & Aldrich, Archts., Corby Bldg., St. Louis; Bill & Traber, Asso. Archts., Columbia; brick, rein. concrete and stone, 2 stories and basement, 108x125 ft. 10-6

Mo., Kansas City—City, reported, has preliminary plans in progress by Wight & Wight, Archts., First Natl. Bank Bldg., for \$1,000,000 art museum. 10-14-26

Mo., University City, St. Louis—Town of University City, E. B. Colby, Clk., erect \$30,000 fire station, Olive St. Rd. and Pennsylvania Ave.; brick, 2 stories, 36x35 ft., rein. concrete floor slab and foundation, slate roof; Wm. P. McMahon, Archt., 719 Buder Bldg.; bids in.

N. C., Durham—City, R. W. Rigsby, City Mgr., soon call for bids for fire-training tower, Morris St.; 6 stories.

N. C., Roxboro—Person County Board of Commrs. will call election on courthouse bonds.

Okla., Ada — Pontotoc County Court has low bid from Wilhide-Speakman Co., Dallas, Tex., for courthouse furnishings.

Okla., Pawhuska—Osage County probably take bids about Feb. 1 for \$100,000 courthouse addition; Tonini & Bramblett, Archts., 416½ W. Main St., Oklahoma City. 11-24

Tex., Beaumont—Jefferson County Commission, W. T. Blackmon, Clk., remodel courthouse; Judge B. B. Johnson authorized to have architect submit plans.

Tex., Laredo—City Council probably call for bids in Jan. for central fire station, Matamoros St., and for fire station, the Heights; plans for former by Buez & Merritt; for latter by M. S. Ryan; fire equipment purchased.

## BUILDING NEWS

### BUILDINGS PROPOSED

#### Association and Fraternal

Fla., Tampa—Hillsborough Lodge Assn., Jas. W. Nicholas, Chmn. Bldg. Comm., has opened bids for temple for Hillsborough Lodge No. 25, A. F. & A. M.; cost \$125,000. Italian Renaissance type, 2 stories, 105x105 ft., rough texture buff brick and glazed terra cotta; steam heat, ventilating system; M. Leo Elliott, Archt., 706 Franklin St. 7-14

Ga., Valdosta—American Legion plans to start work early in 1928 on clubhouse. 2-24

Miss., Ocean Springs—Ancient Free and Accepted Masons receive bids Jan. 11 for \$15,000 building; rein. concrete, brick, stone trim, 2 stories, rein. concrete foundation, composition roof; Shaw & Woleben, Archts., Gulfport.

Mo., Cape Girardeau — Ancient Free and Accepted Masons, W. W. Watkins, Master, consider erecting \$150,000 temple.

N. C., Asheville—Independent Order of Odd Fellows erect \$30,000 lodge building, Ravenscroft Drive; 10 rooms.

Tex., San Antonio—Salvation Army, Col. Ed. White, receives bids Jan. 17 for Spanish type building, Presa and College Sts.; cost \$200,000; rein. concrete, hollow tile and stucco, face brick, tile corridors, gravel roof; Atlee B. & Robt. M. Ayres, Archts., Bedell Bldg. 11-17

#### Bank and Office

Ark., Little Rock — Geo. W. Donaghey, Donaghey Bldg., reported, plans store and office building, Markham and Main Sts.; 3 stories or more; cost \$150,000 to \$400,000.

Ca., Mason — Mason Building Corp., organized to erect \$600,000 Medical Arts Bldg., Mulberry St.; 10 stories, fireproof, terra cotta

and face brick, Florentine type, marble wainscoting and rubber tile floors in corridors, circulating compressed air and ice water system, 3 electric elevators; drug store and 3 other stores on first floor; Matthews H. Tardy, Archt.

La., DeRidder—City Savings Bank organized with P. W. West as president; install bank fixtures in building now occupied by Phoenix Drug Co.

La., New Orleans—Fenner & Beane, brokers, remodel ground floor of building, 814-16 Gravier St.; cost \$35,000; new refrigeration, ventilating and steam heating system, wiring, plumbing, plastering, flooring, tile and sheet metal work; Wm. E. Spink, Archt., 1001 Pere Marquette Bldg.

Mo., St. Louis—Chas. A. Niemeyer, Pres., Vane-Calvert Paint Co., 1601 N. Broadway, plans 9-story store and office building, 1327-29-31 Washington St.; cost about \$300,000.

Okla., Oklahoma City—Western Paving Co. erect office building, 600 E. Grand Ave.

Tex., Corpus Christi—W. E. Pope, care Corpus Christi Times, receives bids Jan. 24 for 8-story printing plant and office building, 400 block Chapparral St.; rein. concrete and steel, Gothic type, 75x150 ft.; Times to occupy first floor, 153 offices above; E. Kenneth Ahler, Archt. (See Miscellaneous Enterprises.)

Tex., Los Fresnos, R. D. from San Benito—Delta Development Co. has plans completed by R. Newell Waters, Archt., Weslaco, for \$25,000 bank and office building; 2 stories, 30x100 ft. 12-8

#### Churches

Ky., Louisville—Knesseth Israel Congregation, Albert N. Mandelbaum, Rabbi, purchased

Tex., Lufkin—City have plans completed by Shirley Simmons for \$20,000 fire station; 2 stories, brick. 10-20

### Dwellings

Ala., Bessemer—Lakewood Estates erect English type brick veneer and stucco dwelling; 2 stories, 3 baths, slate roof, steam heat; Denham, Van Keuren & Denham, Architects, Comer Bldg., Birmingham; bids in.

Ark., North Little Rock, Little Rock—Justin Matthews, Jr., Park Hill, erect \$50,000 residence, Skyline Drive; Italian type, brick, stone and stucco, 2 stories and basement, 62.7x92.8 ft., oak floors, tile roof, swimming pool, marble; Max Mayer, Archt., Donaghey Bldg., Little Rock.

D. C., Washington—Herbert G. Barrett erect \$13,000 frame residence, 3200 McKinley St. N. W.; 2 stories.

D. C., Washington—L. E. Breuninger & Sons, Colorado Bldg., erect \$20,000 dwelling, 7604 Alaska Ave. N. W.; 2 stories, stone and tile.

D. C., Washington—Cooley Bros., 927 15th St. N. W., erect 3 brick dwellings, 410-14 Oglethorpe St. N. W.; 2 stories; total cost \$24,000.

D. C., Washington—Michigan Manor Park Co., 4714 13th Pl. N. E., erect 4 brick and tile dwellings, 4301-03, 4313-15 Thirteenth Place N. W.; 2 stories; total cost \$24,000.

D. C., Washington—J. S. Williams Construction Co. erect 2 brick and tile dwellings, 4117 Thirty-seventh St. and 3638 Van Ness St. N. W.; 2 stories; total cost \$17,000.

Fla., Coral Gables, Miami—Delbeck Corp. erect \$11,000 residence and garage, 1106 Alhambra Circle; 2 stories.

Fla., Coral Gables, Miami—Carl Green erect \$15,000 residence and garage, 617 Alhambra Circle; 2 stories.

Ga., Macon—E. H. & B. M. Moore, Lynmore Pl., erect 3 Elkan stone-tile dwellings, 400 block Beach Ave.; also brick veneer dwelling, Ormand Terrace, Lynmore Place; cost \$6000 each.

La., New Orleans—Mrs. S. J. Besthoff, Jr., 6016 St. Charles Ave., erect frame stucco residence and garage, Audubon Blvd. and Hickory St.; rein. concrete foundation, cast stone work, tile and oak floors, cast stone, orn. iron, hot water heaters, oil burner; Emile Well, Inc., Archt., Whitney Bank Bldg., receiving bids.

La., New Orleans—Warren C. Graham erect \$25,000 residence, 1517 Audubon Blvd.; brick veneer, Graham Engineering Co., Archt., 208 Godchaux Bldg.

La., New Orleans—John E. Cooper, 1332 Alvar St., erect double cottage, Galvez St. near Levee St.

Md., Baltimore—C. C. Porter, 352 Gwynn Ave., erect frame dwelling, 4617 Putney Way, Homeland; cost about \$10,000.

Md., Baltimore—R. Forlifer, 4918 Wilson Ave., erect residence, Broxton Rd., Homeland.

Miss., Corinth—Corinth Development Co. erect 2 brick veneer dwellings and garages; 1 story and basement, oak floors, tile bath, composition shingle roof, hot water heat; J. Frazer Smith & H. M. Burnham, Architects, Goodwyn Institute, Memphis, Tenn.

Mo., Kansas City—H. H. Carrothers, Bldr., 6803 E. 39th St., soon start work on \$20,000 Georgian type residence, 56th St. and Pennsylvania Ave., after plans by Buckley & Van Brunt, 823 Floyd Building; brick, buff Bedford limestone trim, metal casements, slate roof. 12-29

Mo., Maplewood, St. Louis—N. H. Massie, 6402 Enright St., erect 4 brick dwellings, 7900 block Caroline Ave.; 1 story; cost \$2500 each.

Mo., St. Louis—Home Realty & Building Co., 1120 Chesnut St., erect 2 brick dwellings, Buckingham Drive, Moorlands; 2 stories, and basement, 27x40 ft., hardwood floors, tile baths, asbestos shingle roof; Russell Conselman, Archt., 312 Calumet Bldg.

Mo., Springfield—Rufus Wells, 700 S. National Ave., plans 8 dwellings near 1000 block McCann St.; frame and stucco, 1 story and basement, 24x35 ft.; cost \$3000 each.

Okla., Tulsa—Rucks-Brandt Construction Co., M'd Continent Bldg., erect 3 dwellings, 2719-2729-2807 S. Cincinnati Ave.; total cost \$31,000.

Tenn., Memphis—M. G. South, 310 First Natl. Bank Bldg., plans brick veneer and stucco residence and garage; cost about \$10,000. 2 stories and basement, oak floors, tile bath, composition shingle roof, hot-water heat.

Tenn., Memphis—Ben P. Dlugach, Byrd Bldg., plans 2 brick veneer dwellings, Colonial Heights; 1 story and basement, 5 and 6 rooms, oak floors, tile baths, composition shingle roofs, hot-water heat; total cost \$18,000.

Tex., Amarillo—M. C. Hammock erect brick residence, 3201 Van Buren St.; cost about \$10,000; 6 rooms, 1 story, 36x44 ft., shingle roof.

Tex., Beaumont—J. H. Phelan, Sec.-Treas., Yount-Lee Oil Co., San Jacinto Life Bldg., erect \$250,000 Colonial residence on 20-acre tract facing Houston Highway; landscaping \$50,000; brick and stone, 120x85 ft., black and cream marble hall floor and wall base, swimming pool, garage and servants' quarters, suspended glass ceiling in ballroom, tile walls in kitchens, pantries and baths, gas vapor vacuum heating system, \$25,000 pipe organ, stables, golf course; Owen J. Southwell, Archt., Haas-Howell Bldg., Atlanta, Ga.

Tex., Brownsville—E. H. Parker having plans drawn by Stanley W. Bliss, Archt., Harlingen, for \$12,000 residence; hollow tile and stucco, 2 stories. 12-22

Tex., Fort Worth—C. O. Flowers erect 2 brick veneer dwellings, 2214-18 Ashland St.; cost \$5500 each.

Tex., Houston—Dr. C. M. Aves, Humble Bldg., erect brick veneer residence, South Blvd. and Woodhead Ave.; 2 stories, 10 rooms, hardwood floors, tile baths, composition shingle roof; J. W. Northrop, Jr., Archt., West Bldg., have plans ready about Jan. 10.

Tex., Houston—J. L. Tibbot, First Natl. Bank Bldg., erect 2 duplexes and garages, 5102-06 Jackson St., Southmore Addition; cost \$7000 each, 12 rooms, 2 stories.

Tex., Rankin—W. H. C. Goode, Sidney, O., erect number dwellings, West Lawn addition.

Tex., San Angelo—E. O. Savage erect 3 brick veneer dwellings, 1511-15-19 Jackson St.; cost \$6000 each.

Tex., San Antonio—Alamo Development Co., 1403 W. Woodlawn Ave., erect 3 brick veneer and frame and stucco dwellings, 1934-38-2059 W. Woodlawn; owner builds.

Tex., San Antonio—Robt. McGarraugh, 201 Lullwood Ave., erect 3 frame and stucco and stone veneer dwellings, 334 W. Lullwood, 122 E. Lullwood and 217 W. Elsmere; 6 and 7 rooms; owner builds.

Tex., Wichita Falls—Mytinger & Walker, Harvey-Snyder Bldg., erect 7 dwellings, Welch, Baltimore, Juarez and Dayton Sts.; total cost \$15,500.

Va., Richmond—John S. Christian, care Kimbrough, McCarthy & Christian, and associates erect 14 brick dwellings, Stuart and Hanover Aves.; total cost \$250,000.

### Government and State

Ala., Montgomery—Constructing Quartermaster, Maxwell Field, reported, let contract at \$67,338, to A. C. Sanford, Shepherd Bldg., for 13 non-commissioned officers' quarters and utilities; tile and stucco, 1-story.

La., New Orleans—United States Public Health Service, Dr. Hugh Cumming, Surgeon General, Washington, D. C., reported, planning to start work in near future on Marine Hospital; \$1,800,000 allotted.

Md., Sharpsburg—Quartermaster Supply Office, U. S. Army, Washington, D. C., receives bids Jan. 20 for installing plumbing fixtures, sewer, water supply, hot water heating plant and making certain other necessary alterations and improvements in basement and first floor of old lodge building, Antietam National Cemetery.

Mo., St. Charles—Missouri National Guard erect combined mess hall and storage building, Rifle Range.

N. C., Fort Bragg—Government, reported, erect permanent quarters for officers and enlisted men, Fort Bragg; cost about \$500,000, rein. concrete, steel sash, concrete floors, built-up roof, steam heat; Constructing Quartermaster, Fort Bragg, may soon call for bids.

N. C., Kinston—State Industrial Farm Colony for Women, Richard F. Churchill, Chmn., Board of Directors, probably start work in several months on building for colony; \$60,000 available. 7-14

Va., Quantico—Bureau of Yards and Docks, Navy Dept., Washington, D. C., reported, drawing plans for fireproof barracks at Marine Barracks; funds available by first deficiency bill signed by President; probably open bids in March.

### Hospitals, Sanitariums, Etc.

Ala., Birmingham—Jas. H. Elkins Construction Co., 1111 Martin Bldg., has steel erection contract for \$500,000 Hillman Hospital

annex under construction; Harry B. Wheelock, Archt., Steiner Bldg.; Percy W. Swern, Consult. Archt., 19 S. LaSalle St., Chicago, Ill.; A. J. Krebs Co., Contr., Watson Bldg., Atlanta, Ga. 12-1

D. C., Anacostia, Washington—President signed first deficiency bill providing \$214,000 appropriation for St. Elizabeth's Hospital; also funds for new quarters for Health Dept. clinics.

La., Shreveport—Dr. L. H. Pirkle and Dr. T. E. Williams, both 2622 Greenwood Rd., erect \$25,000 clinic; face and common brick, stone trim, 2 stories and basement, 50x100 ft., built-up roof, tile baths, struct. steel, E. A. George, Archt., Giddens-Lane Bldg.; R. G. Shisler, contract at \$21,576.

Miss., Jackson—Mississippi Hospital Removal, Improvement and Land Sale Commission, R. L. Brown, Sec., Box 40, receives bids Jan. 15 for 2 elevators for infirmaries for \$4,500,000 Mississippi Insane Hospital, Whitfield; plans and specifications from N. W. Overstreet, Archt., Miss. Fire Bldg., Jackson; Henry C. Muskopf, Archt., 864 Newport Ave., St. Louis, Mo.

Tex., Snyder—Scurry County votes Jan. 17 on \$80,000 hospital bonds. Address County Commission.

Va., Luray—Mrs. H. R. McKay and R. H. Pittman interested in hospital; about \$15,500 available; site donated by Col. T. C. Northcott of Luray Caverns Corp.

W. Va., Berkeley Springs—Dr. H. E. Williams, Huntington, reported, plans sanitarium.

### Hotels and Apartments

Ark., Blytheville—Dr. F. L. Husbands purchased Glencoe Hotel property, will remodel.

La., New Orleans—W. T. Nolan, Archt., 1048 Canal Bank Bldg., planning \$48,000, 2-story apartment house on Prytanla St.; composition and tile roof.

Miss., Gulfport—W. L. Sullivan, owner of Colonial Hotel, plans remodeling.

Miss., Gulfport—George W. Shirley receives bids Jan. 5 for 3-story, stucco and hollow tile, 55-room hotel on site of Old Ballenger Bldg. on 14th St.; Shourds & Bean, Architects.

Tenn., Memphis—H. P. Wade, First Natl. Bank Bldg., erect \$10,000, 2-story, brick, 12-apartment building at 789 Mississippi St.

Tenn., Rossville—Max Brenner, E. Mennen and M. Rubenstein plan to convert upper floors of building at 50th St. and Rossville Blvd. into hotel.

Tex., Corpus Christi—Powell Olmstead has plans in progress by Stanley W. Bliss, Harlingen, for two \$12,000, hollow tile and stucco apartment buildings.

Tex., Dallas—George W. Owens and W. R. Hughes planning to erect \$150,000, 5 to 7 story reinforced concrete with brick and stone facing, 50-room hotel at Colorado St. and Ballard Ave., Oak Cliff; 25-car garage in rear.

Tex., Fort Worth—W. C. Guthrie, 909 Throckmorton St., has permits for two \$30,000, brick veneer apartment buildings at 1420-24 College St.

Tex., Galveston—Hotel Galvez Operating Co., Jack E. Pearce, Pres., leased Hotel Galvez, expend \$100,000 for new equipment and improvements.

Tex., Houston—C. C. Bell, Jr., purchased S. E. corner Smith and Anita Sts., reported, will erect apartment building.

Tex., McAllen—Morris Nelson have completed plans this week by Harvey P. Smith, Natl. Bank of Commerce Bldg., San Antonio, for first unit of hotel building; \$375,000, 11 stories and basement, 157 rooms, reinforced concrete frame, cement tile, stucco, cast stone hotel building. 11-4

Tex., San Antonio—Hilltop Hotel Co., care H. C. Wood, Travis Bldg., has preliminary sketches in progress by Kelwood Co., Travis Bldg., for first unit of tourist hotel in Olmos Park District; \$500,000, 3 and 4 stories, stucco on hollow tile, Spanish type, reinforced concrete foundation. 12-29

### Miscellaneous

Ky., Louisville—Lincoln Club, Hubbard R. Petty, Pres., contemplates erecting clubhouse; Henry J. Stites, Starks Bldg., Chmn. Building Committee.

Miss., Pascagoula—Pascagoula Community League, care H. F. Gautier, soon have plans by Martin Shepard, Balter Bldg., New Orleans, La., for \$11,000 to \$13,000, 1-story, frame and stucco 85x100 ft. community house; reinforced concrete foundation, plastered interior, hardwood floors; receive bids about Jan. 15.

Mo., St. Louis—Burdeau Realty Co., 801



Chestnut St., purchased site 100 ft. on Washington Ave. and 95 ft. on E. 21st St., reported, will erect building.

Okl., Tulsa—Oklahoma Jockey Club, care Charles T. Henshall, Alexander Bldg., planning \$150,000, 3-story and basement clubhouse, \$100,000 grandstand, \$50,000 stables, etc., in connection with proposed racing plant. See Miscellaneous Enterprises.

Tenn., Knoxville—Nicholson Art League, Mrs. A. H. Dailey, Vice-Pres., 3035 Dandridge Pk., working in co-operation with East Tennessee Historical Society, planning \$100,000 art museum; City Planning Commission approved proposal that museum be made part of proposed Civic Center.

Tex., San Antonio—Central Properties, Inc., care J. M. Watson, 117 E. Summit St., leased property at Pecan and St. Mary's Sts., plans to improve.

Va., Newport News—Newport News Women's Club may acquire brick dwelling at 32d St. and West Ave.; will build auditorium and convert present building into apartment.

### Schools

Ala., Birmingham—Board of Education, D. E. McKinley, Business Mgr., receives bids Jan. 6 for erection of Woodrow Wilson school; combination bids invited on following: General work; plumbing, sewerage and gas fitting; heating and ventilation; electric work; plans and specifications from Warren, Knight & Davis, Architects, Empire Bldg.; William B. Itner, Const. Archt., Board of Education Bldg., St. Louis, Mo.

Ala., Birmingham—Birmingham Southern College, Dr. Guy E. Snavey, Pres., plans immediate restoration work on Student Activities Building, recently damaged by fire at \$50,000 loss.

Ark., Bentonville—School Board selected John Parks Almand, Archt., Little Rock, prepare plans for \$100,000 school building. 12-15

Ark., Lexa—Lexa Consolidated School; loss \$23,000. Address Board of Trustees.

Ark., Rogers—School Board of Rogers Special District considering erecting addition to Sunnyside School.

D. C., Washington—Dr. Harold G. Moulton, Pres., 26 Jackson Pl. N. W., announced formation of Brookings Institution; contemplates erecting group of buildings.

D. C., Washington—George Washington University board of trustees announced gift of \$1,000,000 from Supreme Council, Scottish Rite Masons of the Southern jurisdiction, for establishment of school of government.

Fla., Englewood—Sarasota County Board of Public Instruction selected S. C. Schwelke, both Sarasota, as Archt. for new school building; \$38,000 bonds recently voted.

Fla., Tallahassee—State Board of Control, State Bldg., opens bids Jan. 12 on dining hall extension and dormitory at Florida Agricultural and Mechanical College for Negroes; \$100,000; Rudolph Weaver, Archt., 200 Peabody Hall, University of Florida, Gainesville; following contractors estimating on dining hall: Christopher & Co., 608 Riverside Ave.; Perkins Construction Co.; Charles J. Davis, 902 Second Ave., all Jacksonville; C. A. Fulghum, Thiesen Bldg.; James W. Eley, Brent Bldg., both Pensacola; Grahm Construction Co., 133 1/2 Magnolia Ave., Daytona Beach; F. L. Tillis, Bartow; W. E. Rubush, Leesburg; W. P. Thurston Co., Miami; E. W. Parker, 305 Cass St., Tampa; bidders on dormitory are: D. D. Thomas & Son, Lutz Bldg.; Arthur Perry; Christopher & Co.; R. J. Gillespie; Charles J. Davis; Sutton Brothers, Atlantic Natl. Bank Bldg., all Jacksonville; Grahm Construction Co., Daytona Beach; C. A. Fulghum, Pensacola; Cahow Construction Co., Fort Pierce; W. P. Thurston Co.; Harrison Construction Co., 235 N. E. 36th St., both Miami; F. L. Tillis, Bartow; W. E. Rubush, Leesburg; E. W. Parker, Tampa; James W. Eley, Pensacola; J. L. Crouse, American Bank Bldg., Greensboro, N. C. 12-15

Fla., Tampa—Hillsborough County Board of Public Instruction, J. C. Anderson, Chmn., has plans in progress for 2-story and basement, 60x110 ft. school building; brick and terra cotta trim, slate blackboards, pine and tile floors, contain 10 classrooms; Frank Dunham, Archt., 1010 Tribune Bldg.

Fla., Tampa—Hillsborough County Board of Public Instruction receives bids Jan. 12 for \$50,000, brick school building at Ucita; 10 classrooms, auditorium and cafeteria; Frank A. Winn, Jr., Archt., 207 1/2 Twiggs St.; also planning \$50,000 addition to Oak Park School.

Fla., Tampa—Hillsborough County Board of Public Instruction, W. D. F. Snipes, Sec., receives bids Jan. 12 for erection of school

at 81st St., for Special Tax School District No. 4; plans and specifications from Frank A. Winn, Jr., Archt., 207 1/2 Twiggs St.

Ga., Ambrose—Coffee County Board of Education, Douglas, probably call bond election for brick consolidated school.

Ga., Fort Gaines—School Board contemplates rebuilding school recently burned.

Ga., Griffin—State Experiment Station, H. P. Stuckey, Director, has low bid from W. P. Francis, 133 Luckie St., Atlanta, at \$40,000 for 2-story and basement, fireproof, brick Laboratory Building; Frazier & Bodin, Architects, Candler Bldg., Atlanta. 12-29

Ga., Reidville—Board of Trustees Reidville School District, D. L. Stanfield, Chmn., planning \$50,000, 1-story, brick school building; equipment and furnishings cost \$5000; architect not yet selected. See Want Section—Building Materials and Equipment. 12-29

Ga., Tifton—Board of Trustees, Tifton Consolidated School District, care H. F. Gibbs, let contract to W. H. Spooner, at \$43,175, for 1-story, brick veneer, U-shaped, 200x112x58 ft. school building; concrete foundation, maple floors, composition shingle roof; equipment and furnishings cost \$5000; Warren Webster steam heating system; Daniell & Beutell, Architects, 307-9 Healey Bldg., Atlanta. 12-29

La., Bastrop—Morehouse Parish School Board call election Jan. 24 on \$125,000 bonds to purchase sites, improve 1 site and erect and equip school in Districts Nos. 2 and 3.

La., Baton Rouge—Louisiana State University, Dr. Thomas W. Atkinson, Pres., plans to let contract next month for \$250,000, brick, 3-story, fireproof, 60x160-ft. gymnasium; Wogan & Bernard, Architects, Old Raymond Bldg.

La., Monroe—Louisiana Training Institute has completed plans by J. W. Smith and Associates, Quachita Bank Bldg., soon call for bids on dormitory and school buildings; \$60,000 available. 11-4

La., New Orleans—E. A. Christy, Supvg. Archt. for New Orleans Parish School Board, City Hall Annex, soon complete plans for 1-story and basement, frame and stucco, 10-classroom addition to McCarthy School, 621 Pauline St.; reinforced concrete foundation, plastered interior.

La., Serepta—Webster Parish School Board, Minden, has preliminary plans and specifications for 2-story, reinforced concrete, brick and stone trim High School; 13 classrooms, library, office and cooking room; \$70,000 bonds recently voted; Edward F. Neild, Archt., City Bank Bldg., Shreveport. 11-24

Md., Baltimore—Municipal Architectural Commission appointed following Architects for school additions: Clyde N. Friz, Lexington Bldg., for Arlington School; Edward H. Glidden, Jr., School No. 84, Johnson and Heath Sts.; and Bayard Turnbull, Gardenview School; Dr. David E. Weglein, Supt. of Public Instruction.

Md., Frederick—Frederick County Board of Education purchased 10 acres on south side of Baker Park as site for elementary school to be erected during 1928.

Md., Upper Marlboro—Prince Georges County Board of Education approved plan to purchase sites for high schools in Decatur Heights and Mount Ranier.

Miss., Brooklyn—Forrest County Agricultural High School will ask \$125,000 appropriation for additional buildings, equipment and repairs; Kirby Walker, Supt.

Miss., Hickory—Board of Education, W. M. Everett, Chmn., Building Committee, selected P. J. Krouse, Meridian, as Archt. for rebuilding school recently burned. 12-29

Miss., Lexington—City voted \$60,000 bonds for improvement of present school and erection of new High School; Board of Education. 12-8

Miss., New Hebron—Board of Trustees New Hebron Consolidated School District planning new building.

Miss., Picaune—Board of Trustees of Picaune Separate School District, C. McDonald, Pres., receives bids Jan. 13 for 1-story, brick grammar school building; plans and specifications from N. W. Overstreet, Archt., Miss. Fire Insurance Bldg., Jackson. 11-10

Miss., West Point—Mayor and Board of Selectmen call election Jan. 17 on \$150,000 bonds for new schools.

Mo., Joplin—Board of Education, J. J. Barnett, Pres., rejected all bids for \$60,000 West Central School, Seventh St. and Gray Ave.; contractors asked to submit revised bids eliminating auditorium; J. H. Felt & Co., Architects, 300 West 47th St., Kansas City. 12-15

N. C., Durham—Board of Education receives bids Jan. 10 for brick, concrete and

stone Junior High School building; concrete and wood floors, built-up roof, steam heat; Milburn, Helster & Co., Architects, First Natl. Bank Bldg., Durham, and Hill Bldg., Washington, D. C.

N. C., Lexington—City voted \$110,000 bonds; erect new elementary school and improve Robbins school; J. H. Cowles, Supt. of Schools. 11-24

N. C., Wingate—Union County Board of Education, C. F. Gaddy, Supt., Court House, Monroe, receive bids about Feb. 1 for \$75,000, 2-story, brick school building; composition roof, wood partition walls, wood floors, plastered, 212x140 ft., concrete foundation, equipment and furnishings cost \$25,000; J. Tucker, Archt., Monroe. 12-22

N. C., Winston-Salem—Southeastern territory of Forsyth County, including Jack's Temple, Abbott's Creek 1, Broadway and Pine Stump districts, voted special tax for \$42,500 consolidated school. Address Forsyth County Board of Education.

Okl., Pawnee—Town voted \$27,000 bonds toward construction of \$40,000 High School gymnasium; address Board of Education.

Okl., Turpin—Turpin Consolidated School District voted \$30,000 school bonds. Address Board of Trustees.

Tex., Abilene—Simmons University, Dr. J. D. Sandefur, Pres., construct first unit of football stadium; \$15,000.

Tex., Austin—State Board of Control, Dr. H. H. Harrington, Chmn., contemplates erecting \$40,000, brick and reinforced concrete gymnasium, School for Deaf and Dumb; Gleescke & Harris, Architects, Natl. Bank Bldg.

Tex., Bartow—Pyote Common School District soon vote on \$100,000 school bonds. Address Board of Trustees.

Tex., Bellaire—Lamar Q. Cato, Bankers Mortgage Bldg., Houston, retained as Archt. for new building for Harris County School for Girls.

Tex., College Station—Agricultural and Mechanical College of Texas have plans about June 1 for fireproof, brick and reinforced concrete Library Building; Prof. F. E. Gleescke, College Archt. 12-8

Tex., Dallas—Board of Education purchased ground for proposed York School, to be built near intersection of Lemmon Ave. and Mocking Bird Lane, north of Oak Lawn.

Tex., Mercedes—City soon vote on \$38,000 bonds to purchase additional property for schools. Address School Board.

Tex., Shiner—Shiner School District voted bonds for construction of High School; address Board of Trustees.

Tex., South San Antonio—Board of Education, care B. L. Smith, First State Bank, contemplates \$50,000 bond election for new school building; Phelps & Dewees, Architects, Gunter Bldg., San Antonio.

Va., Norfolk—School Board will ask City Council for additional school facilities in Lafayette district.

Va., Richmond—School Board, W. Floyd Reams, Chmn., let contract to Harwood Construction Co., Law Bldg., Newport News, at \$413,536, for 3-story East End Junior High School; Doric design, 36 units, accommodate 1000 pupils; Charles M. Robinson, Archt., Times-Dispatch Bldg. 12-8

Va., Roanoke—School Board let contract to T. J. Davis Building Construction Co., MacBain Bldg., at \$136,441, for Lucy Addison Colored High School, Hart and Douglas Aves. N. W.; heating and ventilating to R. H. Lowe & Co., 125 Salem Ave. W.; plumbing and electrical work in general contract; Frye & Stone, Architects, MacBain Bldg. 10-13

### Stores

Ala., Birmingham—Doster Northington, Inc., 2108 N. First Ave., soon start work on 5-story and basement, 100x140-ft., brick and reinforced concrete, stone trim store building; steam heat, tar and gravel roof, 2 elevators and 1 conveyor; Miller & Martin, Architects, Title Bldg.; bids received.

Ark., Little Rock—George W. Donaghey, 2109 Gaines St., reported, planning new business building at S. E. corner Markham and Main Sts.

Ga., Waycross—A. R. Hood announced plans to rebuild furniture store recently burned; 3 stories and basement, brick walls, composition roof.

Ky., Louisville—Broad and Fourth Ave. Realty Co. has permit for \$150,000, brick and concrete stores and garages at 407-31 W. Broadway.

Miss., Greenwood—W. S. Barry plans to rebuild store at Shellmound recently burned.

Miss., Jackson—D. C. Simmons, 843 N. President St., closed contract with Dave

Gordon for erection of building on E. Capitol St.

N. C., Gastonia—H. L. Reynolds purchased lot on South St.; will erect 3-story business building.

Okla., Enid—H. H. Champlin has plans in progress by R. W. Shaw, for 125x150 ft., fireproof commercial building.

Tex., Cuero—J. C. Penney Co., Inc., 330 W. 34th St., New York, N. Y., leased cor. Main and Gonzales Sts.; erect 2-story brick store and office building.

Tex., Dallas—Titcher-Goettinger Co., Edward Titcher, Pres., Main and Erway Sts., purchased property facing 125 ft. on Main St., 200 ft. on St. Paul and 75 ft. on Elm St.; will erect 8 or 10-story and basement store building.

Tex., Fort Worth—Anderson-Burney Investment Co. has permit for \$75,000 concrete and brick store building at Seventh and Lexington Sts.

Tex., Houston—J. W. Neal, Vice-Pres. and Gen. Mgr. of Cheek-Neal Coffee Co., Preston and St. Emanuel Sts., plans to erect business building at S. W. cor. Polk and Caroline Sts.

Tex., Houston—C. L. House, owner of Montrose Grocery, 3302 Louisiana St., advises regarding proposed store center at Milam and Stuart Sts.: "Will be 60 days before plans and specifications are ready." 12-22

Tex., San Angelo—J. W. Smythe has permit for \$16,000, brick and tile, 50x70-ft. store at 1208 S. Harrison St.

Tex., San Marcos—C. T. Bars & Son take bids at once for remodeling brick store at N. W. cor. Public Square; Roy L. Thomas, Archts., 904 Littlefield Bldg., Austin.

Tex., San Saba—Jim McConnell soon have plans for 1 and 2 story store and office addition to hotel; reinforced concrete, steel and brick, \$15,000; Beverly W. Spillman, Archt., Alamo Bank Bldg., San Antonio.

W. Va., Fairmont—O. J. Morrison and associates, 231 Capitol St., Charleston, purchased property at 117-19 Adams St., planning 3-story, 40x165-ft. department store building; razing of present building to start Mar. 1.

### Theaters

Fla., Marianna—Nat P. West completed plans for \$125,000 fireproof theater building; \$25,000 pipe organ; seat 1000 persons.

N. C., Burlington—J. R. Qualls let contracts for theater building on E. Front St.; 40x128 ft., 2 stores at front with entrance and lobby in center, second story for offices.

N. C., Charlotte—Circle Amusement Co., Inc., 300 West Third St., Nat L. Royster, Pres. and Mgr., P. O. Box 1131, will erect

theater building and remodel present one; \$400,000; furnishings and equipment cost \$75,000; steel and concrete, 100x198 ft. See Want Section—Miscellaneous. 9-29

Tex., Alice—Mrs. Rufus Hobbs opened bids for 1-story, 92x120-ft., reinforced concrete, brick, hollow tile and stucco theater and store building; E. B. Jackson Construction Co., 910 Elizabeth St., and J. A. Walsh, Country Club Place, both Corpus Christi, each submitted bid of \$31,000 (low bid); Adams & Adams, Archts., Builders Exchange Bldg., San Antonio.

Tex., Big Springs—R. & R. Theater Enterprises, 2009 Jackson St., Dallas, soon have plans by W. Scott Dunne, 301 Melba Bldg., Dallas, for \$75,000, 3-story, brick and reinforced concrete theater building.

Tex., San Angelo—Ed Rowley of Robb & Rowley Theater Enterprises, Dallas, announced plans for \$140,000, 100x190 ft. theater building; furnishings cost additional \$75,000.

### Warehouses

Ga., Metter—Growers Tobacco Warehouse, care A. J. Bird, voted to increase capital stock from \$12,000 to \$30,000 and build another warehouse.

Ky., Shepherdsville—Troutman Brothers, C. F. Troutman, owners of general store and 5 warehouses burned at \$200,000 loss, reported, planning to rebuild.

Miss., Greenville—Home Hardware Co., J. B. Nash, Mgr., 225 Main St., purchased lot on Washington Ave., as site for brick and steel warehouse.

Miss., Jackson—Mississippi School Supply Co. soon have plans by Claude H. Lindsley, Lamar Life Bldg., for \$40,000, 1-story, brick, fireproof warehouse.

Mo., St. Louis—Marly Investment Co. erect \$300,000 warehouse and manufacturing building; Widmer Engineering Co., Archts., Laclede Gas Bldg. See Miscellaneous Enterprises.

Tex., Houston—Damon Wells, Chronicle Bldg., announced early construction of 5 commercial warehouses, at cost of more than \$250,000; approx. 100,000 sq. ft. floor space, brick and reinforced concrete; will be located at corner Polk and Palmer Sts., Polk and Velasco, Walker and St. Emanuel, McKinney Ave. and Lamar St., and Harrisburg Blvd. and Velasco Sts.

Tex., Houston—Texas Terminal Co., Rex R. Frazier and J. R. Cheek, Second Natl. Bank Bldg., planning \$1,250,000, 10-story, reinforced concrete warehouse and office building near North Main St. viaduct; Moore & Dunford, Inc., Engrs., 110 E. 42nd St., New York.

## BUILDING CONTRACTS AWARDED

### Association and Fraternal

Miss., Hattiesburg—Young Women's Christian Assn. let contract to McLaughlin & Glenn to complete \$25,000 building; E. C. Heaton & Son, Archts., 201½ W. Pine St. 8-4

Tenn., Knoxville—Salvation Army, W. H. Phillips, Commandant, let contract to J. M. Dunn & Sons, 245 Broad St., for building, site present structure, Wall Ave.; auditorium.

### Bank and Office

Fla., Jacksonville—Monticello Drug Co. convert 5-story steel and masonry garage building under construction, Adams St., near Hogan St., for offices; cost \$30,000.

Md., Baltimore—Following contracts let on \$250,000 Central Fire Insurance Co. office building: Dampproofing and plaster key, Wm. F. Zeller Co., Inc., 613 W. Cross St., par lock applicators of Maryland; plumbing, heating and ventilating, Lloyd E. Mitchell, Inc., 915 E. Monument St.; ornamental iron work, Herzog Iron Works of St. Paul, Minn., Wm. T. Carson, Agt., 17 W. Saratoga St.; Thorn steel casement windows, Wm. E. Gambrell, Commerce and Baltimore Sts.; struct. steel, Dietrich Bros., 220 Pleasant St.; special millwork, C. O. Wurzbarger & Sons, Annapolis Ave.; roofing and sheet metal work, John O. White Co., Garrison Lane and P. R. R. Co.; concrete reinforcing bars, Maryland Steel Products Co., Standard Oil Bldg.; plate glass, H. J. Gettemuller & Co., 600 Ensor St.; interior marble, Hilgartner Marble Co., Sharp and Ostend Sts.; excavating, Potts & Callahan, Knickerbocker Bldg.; elevator doors and hollow metal doors, Dahlstrom Metallic Door Co., Brauns & Graham, Agts., 509 N. Charles St.; gypsum floors and roof, Structural Gypsum Corp., Chas. A. Weiler, representative, Lexington Bldg.; cast stone, Benedict Stone

of Maryland, Inc., Montford Ave. and Boston St.; Clyde N. & Nelson Friz, Archts., Lexington Bldg.; C. L. Reeder, Mech. Engr.; H. F. Doeleman, Struct. Engr.; Henry A. Knott & Co., Contrs., 2107 North Charles St. 10-20

Md., Baltimore—Sherwood Bros., Inc., Continental Bldg., let contract to B. F. Bennett Building Co., 123 S. Howard St., for \$75,000 building, Charles St. and North Ave., for bank, store, offices and portion of filling station; 2 stories and basement, 38x80 ft., fireproof, concrete and steel, limestone exterior backed with brick, slag roof; Henry F. Hopkins and Allen C. Burton, Archts., 347 N. Charles St.; Van R. P. Saxe, Engr., Knickerbocker Bldg. 9-24

Mo., St. Louis—DeBord Co., 4390 Lindell Blvd., has plumbing contract for \$2,500,000 Missouri Pacific R. R. Co. office building; plans by E. M. Tucker, Missouri Pacific architect; Mauran, Russell & Crowell, Asso. Archts., Chemical Bldg.; Humes-Deal Co., Contrs., 1416 Syndicate Trust Bldg. 11-17

Okla., Tulsa—Long Construction Co., 2731 S. St. Louis St., has permit for 6 passenger elevators for \$2,000,000 Exchange National Bank & Trust Co. building, 419 S. Boston Ave.; Weary & Alford Co., Archt.-Engr., 1923 Calumet Ave., Chicago, Ill.; Wm. H. Horster, Constr. Supervisor, Exch. Natl. Bank Bldg., Tulsa. 10-20

Tex., Houston—Jesse H. Jones, Goggan Bldg., let contract for 4690 tons fabricated structural steel for \$4,500,000 office building, Main and Rusk Sts., to Petroleum Iron Works, Beaumont; Alfred C. Finn, Archt. Bankers Mortgage Bldg. 5-26

### Churches

Fla., Gainesville—First M. E. Church, South, tentatively let contract to Winston & Penny for \$200,000 church and Sunday

school; brick, art stone trim, 1 story and balcony and 3 stories, pine and oak floors, composition roof; Hart, Freeland & Roberts, Archts., Independent Life Bldg., Nashville, Tenn. 12-22

Ga., Atlanta—Second Church of Christ, Scientist, let contract to C. R. Justi, Forsyth Bldg., for frame building, Juniper and Fourth Sts.; 1-story and basement, 73x40 ft., concrete footings, composition roof; Pringle & Smith, Archts., Norris Bldg. 12-29

Md., Baltimore—Memorial M. E. Church, Rev. Orr's Robinson, Pastor, 3021 Frederick Ave., let contract to Cogswell-Koether Co., 406 Park Ave., for \$50,000 building, 3408-10 Frederick; 2 stories, stone and stucco, slate roof, wood floors; steam heating not in gen. contract; Jory & Spittell, Archts., Munsey Bldg.

Md., Salisbury—Asbury M. E. Church let contract at \$62,168 to J. Roland Dashiell, Division St., for Sunday school; stone, 3 stories, 101x40 ft., 15x34 ft. and 26x29 ft., concrete foundation, slate roof; Norman Hulme, Archt., 1524 Chestnut St., Philadelphia, Pa.; electrical work, Eastern Shore Gas and Electric Co., Division St.; plumbing, L. W. Gunby Co., Main st.; roofing and sheet metal, Carl Goslee, all Salisbury; stone work, Seymour Ruff & Son, 2133 Maryland Ave., Baltimore. 12-29

Tex., Abilene—First Baptist Church let contract at \$140,000 to Balfanz Construction Co., for fireproof Sunday school annex; face brick and concrete, 4 stories, L-shape, 60x155 ft. and 65x90 ft., accommodate 3000; Wm. Nichol and Geo. F. Campbell, Archts., 29-30 Radford Bldg. 6-30

Tex., Caldwell—First Baptist Church, Rev. W. O. Wright, Pastor, erect \$40,000 brick and tile building; contract let; install pipe organ.

Tex., Galveston—Union Art Mosaic & Tile Co. has terrazzo and tile work contract for \$55,000 B'nai Israel community center; R. R. Rapp, Archt., 417 Guaranty Bldg.; J. W. Zempter & Co., Contrs., 2204 B St. 11-17

Tex., Lamesa—Church of Christ started work on \$35,000 building, N. First and Travis Sts.; brick and stucco, 1 story and basement; Address The Pastor.

### City and County

Ala., Birmingham—City Commission let contract at \$12,240 to Wilborn Construction Co. for Central Park Fire Station; brick, 2 stories; Denham, Van Keuren & Denham, Archts., Age-Herald Bldg.; equipment purchased. 9-29

Ala., Birmingham—City Commission let contract at \$25,819 to Johnson-Woolley Construction Co. for fire station, Woodlawn Pk.; Turner & McPherson, Archts., 1212 Martin Bldg.

Ga., Canton—Cherokee County let contract to J. S. McCauley Co., Bona Allen Bldg., Atlanta, Ga., for \$150,000 courthouse and jail; rein. concrete and steel truss roof, marble and face brick exterior, fireproof, 4 stories, 82x94 ft., wood and marble tile floors, rein. concrete foundation, slate and composition roof; furnishings, equipment, etc., \$25,000; low pressure steam heating, electrical work and plumbing in gen. contract; A. Ten Eyck Brown, Archt., Forsyth Bldg., Atlanta; jail work to Pauly Jail Building Co., 2215 DeKalb St., St. Louis, Mo.; 1 electric elevator for jail, Weakley Elevator Co., 375 Elgewood Ave., both Atlanta. 12-29

Ga., Canton—Cherokee County let contract for \$150,000 courthouse and jail to J. S. McCauley Co., Bona Allen Bldg., Atlanta; jail work, Pauly Jail Building Co., 2215 DeKalb St., St. Louis, Mo.; fireproof, 4 stories and basement, 92x83 ft., rein. concrete, struct. steel trusses, Georgia marble veneer, brick and tile back-up walls, terra cotta interior partitions, composition roof; jail on top floor; A. Ten Eyck Brown, Archt., Forsyth Bldg., Atlanta. 12-29

Ga., Habersham—Lowndes County, E. P. Staten, Chmn., let contract to Lawson Contracting Co., both Valdosta, for brick courthouse; 1 story; Greer & Biggers, Archts., Barnett Bank Bldg., Jacksonville, Fla. 12-15

Mo., St. Louis—Crescent Engineering Co., 2642 Lafayette St., has refrigeration contract at \$23,327 for \$175,000 city morgue; Albert Osburg, Archt.; L. R. Bowen, Engr.; Kellermann Contracting Co., Contr., 421 Victoria Bldg. 10-13

Okla., Poteau—Southern Prison Co., San Antonio, Tex., has contract at \$38,178 for steel cells for jail on roof of courthouse.

Tenn., Memphis—City Park Commission let contract at \$11,534 to Fischer Heating Co., 367 Adams St., for heating work for Pink Palace, City Museum, Central Ave.; exterior finishing work, James Suttie, \$3500.



## Dwellings

Ala., Birmingham—Carper & Shepherd Realty Co., Bankers Mortgage Bldg., erect 4 frame dwellings, West End Highlands; 1 story, wood floors, composition roof, cost \$10,000 each; Brodie & Surman, Archts., 1316 Comer Bldg.; owner builds.

Ala., Birmingham—Calvin Jones, 3053 Highland Ave., erect \$40,000 residence, Rockridge Park; brick veneer, 1 story and basement, 47x100 ft., oak floors, slate roof and porch, steam heat; C. H. McCauley, Archt., 708 Jackson Bldg.; Geo. Paul, Contr., Hollywood.

Ala., Birmingham—Chas. F. Zukoski, 1604 Twenty-fourth St., erect brick veneer and half timber dwelling, Mountain Brook Estates; 2 stories and basement, composition shingle roof, steam heat; Miller & Martin, Archts., 911 Title Guarantee Bldg.; Gibson Construction Co., Contr., First Natl. Bank Bldg.

Ark., Little Rock—C. W. Cox, Conway, erect \$10,000 brick veneer residence, 1701 Spruce St.; 2 stories, 7 rooms, oak floors, tile bath, tile roof; Bracy Building Co., Contr., Rector Bldg.

Ark., Little Rock—Mrs. M. O. Gardner, 300 W. Fourth St., erect \$10,000 residence, 5325 Sherwood Rd., after plans by Clyde A. Ferrall, 307 1/2 W. Second St.; brick veneer, 1 story, 30x49.6 ft., 6 rooms, oak floors, tile bath, composition roof. 11-10

Ark., Little Rock—Himstedt & Son, 208 Louisiana St., have plumbing contract for \$10,000 residence for C. W. Cox, 800 E. 18th St.; 2 stories, 42x31 ft., hardwood floors, tile roof; Bracy Building Co., Archt.-Contr., 610 Rector Bldg.

D. C., Washington—Geo. W. Dorr, McLachlin Bldg., erecting \$10,000 hollow tile and stucco residence, 3518 Thirty-fifth St. N. W.; 2 stories, 29x33 ft., asbestos roof; R. A. Oxenham, Contr., Bethesda, Md. 12-22

Fla., Clermont—F. S. Blivin let contract to C. C. Hayes for residence, Minnehaha Lake Drive, Indian Hills.

Ga., Griffin—Herman Goldstein erect 8-room bungalow, S. Hill St.; Robt. Weaton & Sons, Contrs.

Ga., Macon—J. E. Dunwoody, Jr., Atlanta, erect brick veneer residence, Forest Hill Ave.; 8 rooms, cost about \$10,000; Jas. G. Laster, Contr.

La., New Orleans—E. L. Markel, 3838 Louisiana Ave. Pkwy., erect 5 dwellings; composition and asbestos roofs; total cost \$41,900; owner builds.

La., Shreveport—L. Humble erect \$10,000 residence and garage, 744 Dudley Drive; 8 rooms, frame; Gilman McConnell, Contr.

La., Shreveport—H. B. Johnson erect \$14,500 frame residence; 10 rooms, 2 stories; M. C. Brown, Contr., City Bank Bldg.

Md., Baltimore—Isaac Rosenthal, 1914 Braddish Ave., erect 4 brick dwellings, S. E. cor Braddish Ave. and Walbrook Ave.; 2 stories, 14x46 ft., steam heat; total cost \$12,000; plans and construction by owner.

Md., Baltimore—Glendale Realty Co. erect \$15,000 dwelling, 1004 Winding Way; brick, 2 stories, 67x36 ft., slate roof; Geo. Wessel, Archt., 6001 Lyttleton Rd.; owner builds.

Md., Baltimore—Cityco Realty Co., John J. Hurst, Pres., 7 St. Paul St., purchased 2-acre tract, E. side Glenmore Ave. extending W. of Harford Rd.; erect dwellings, ultimate plans calling for about 132 frame dwellings; 2 stories, 5 to 7 rooms and bath each; plans and construction by owner.

Md., Baltimore—Theophilus White, Calvert and Baltimore Sts., erect \$18,000 stone residence, 1500 Roland Ave.; 2 1/2 stories, 30x50 ft., stone foundation; John Allers, Archt.; Robinson & Slagel, Contrs., American Bldg.

Md., Baltimore—Philip Ashell, 2901 Violet Ave., erect 2 shingle cottages, 3800 block Kate Ave.; 2 stories, 26x40 ft., hardwood floors, stone foundations, asbestos shingle roofs; Abraham Finkelstein, Archt., 2300 block E. Baltimore St.; owner builds. See Want Section—Building Material and Equipment. 12-29

Md., Baltimore—Eric L. Bergland and Miss Mary B. Bergland let contract to L. L. Chambers, Inc., 36th St. and Roland Ave., for \$100,000 residence, Dulany Valley; about 200x60 ft., rubble stone, Heinz tile roof, 1 room finished in Slavonian oak, tile and hardwood floors, Celotex insulation; Laurence Hall Fowler, Archt., 347 N. Charles St.; oil burner heating, Chas. T. King & Co., 523 N. Charles St.

Mo., Kansas City—Thos. Dennis, 5732 Paseo, erect 2 brick duplexes, 1220-22 W. 62nd St.; 2 stories, 60x54 ft.; total cost \$20,000; owner builds.

Mo., Kansas City—R. J. Wright, 3730 Summit St., erect shingle residence, 4947 Wyoming St.; 2 stories, 47x21 ft.; cost about \$10,000; owner builds.

Mo., Kimmswick—Chas. M. Moydell, 1926 Allen Ave., erect \$50,000 residence; brick, 2 stories and basement, terrazzo floors over concrete on first floor, oak above, tile baths, slate roof, hot air heat, septic tank, steel sash, plate glass; Maritz & Young, Inc., Archts., 1116 Chemical Bldg., St. Louis; work by sub-contracts.

Mo., St. Louis—W. M. Dill, 2108 Orear Ave., erect 2 brick dwellings, 4845-49 Anderson Ave.; 1 story and basement, 24x44 ft., hardwood floors, tile baths, asphalt shingle roofs, hot water heat; total cost \$14,000; work by sub-contracts.

Mo., St. Louis—D. J. Kerwin, 5927 Waterman Ave., erect \$35,000 brick and reln. concrete residence, Southmoor subdivision; 2 stories and basement, 60x30 ft.; Trueblood & Graf, Archts., 1517 Chemical Bldg.; E. A. Brunson Construction Co., Contr., 1976 Rwy. Exchange Bldg.

Mo., St. Louis—Arthur Patten, care Hy. Beetz, Contr., 2668 Nebraska St., erect \$18,000 brick residence, University Hills; 2 stories and basement, 43x49 ft., oak floors, tile bath, Flintkote roof, vapor heat; Clarence A. Koenig, 2036A Russell Ave.

Mo., St. Louis—A. Ramsbrock, 6300 Southwood Ave., erect \$15,000 residence, 247 Woodbourne Drive; 2 stories and basement, 60x31 ft., oak floors, tile bath, composition roof, hot water heat; Koester Bros., Contrs., 2863 Laclede Rd.

Mo., St. Louis—Albert Vickel, 4910 Gravois St., erect \$10,000 brick residence, Westmoor Park; 2 stories and basement, 34x36 ft., hardwood floors, concrete foundation, asphalt shingle roof, tile bath, hot water heat; Clarence A. Koenig, Archt., 2036A Russell Ave.

Mo., St. Louis—Compton Hill Baptist Church, 3146 LaSalle St., remodel church; cost \$15,000; Ducommun & Dirks, Archts.-Contrs., 3458 Pestalozzi St.

Mo., University City, St. Louis—Louis E. Demper, 3226A Iowa St., erect \$10,000 residence, 401 Mission Court; brick, 2 stories and basement, 35x36 ft., hardwood floors, stone foundation, tile bath, slate roof, hot water heat; Adolph F. Stauder, Archt., 6032 S. Kingshighway; Albert Pauli, Contr., 3663 Bottanical Ave.

S. C., Orangeburg—Dr. E. O. Horner, Eutawville, erecting \$22,000 residence, North Boulevard and Ellis Ave.; 2 stories, 12 rooms, brick.

Tenn., Knoxville—Mrs. J. R. Coker, 114 W. Main Ave., erect 3 frame dwellings, Chicago Ave.; 6 rooms; total cost about \$10,000; H. E. Rogers, Contr., 900 Jacksboro St.

Tenn., Memphis—Dave Dermon, Dermon Bldg., erect \$25,000 residence, Morningside Park and East Parkway; brick and field stone, 2 stories and basement, 73x45 ft., oak and tile floors, tile roof, garage and servants' quarters; W. C. Lester, Archt., 824 Dermon Bldg.; owner builds.

Tenn., Memphis—Ed Ash, 308 Empire Bldg., erect \$12,500 duplex, Lamar Ave.; 2 stories and basement, 10 rooms, oak floors, tile bath, composition shingle roof, hot water heat; owner builds.

Tenn., Memphis—Sadie Beck Taylor, 1786 Greenwood St., erect \$12,000 residence, 1536 Linden Ave.; brick veneer, 1 story and basement, 58x48 ft., oak floors, composition shingle roof, 3 tile baths, hot water heat; South, Whitten & Haley, Contrs., First Natl. Bank Bldg.

Tex., Amarillo—Tom Huggins erect brick veneer residence, 3605 S. Van Buren St.; 1-story, 5 rooms, 26x36 ft., shingle roof; W. S. Baker, Contr.

Tex., Dallas—Howard Dunham, 3103 Drexel Dr., erecting residence, Potomac Ave. and Armstrong Pkwy., Startford Manor; 7 rooms, 2 tile baths; Bryan & Sharp, Archts., Const. Industries Bldg.

Tex., Dallas—Neth L. Leachman, Magnolia Bldg., erecting \$15,000 modified French type residence, 4209 Edmondson Ave., Highland Park West; light face brick, 2 1/2 stories; C. H. Griesenbeck, Archt., Const. Industries Bldg.; E. E. Norgaard, Contr., 5242 Richard St.

Tex., Harlingen—F. L. Flynn, 1221 Van Buren St., started work on \$11,000 stucco and hollow tile residence; 1 story, 45x50 ft., oak floors, reln. concrete foundation, tile and composition roof, gas heat; S. W. Bliss, Archt.; electrical work and plumbing not let. See Want Section—Building Material and Equipment. 12-22

Tex., Houston—L. M. Tinsley erect \$10,000 residence, 1309 Calhoun St.; brick, 1 story; A. C. Engelking, Contr.

Tex., Houston—R. B. Bowen, Esperson Bldg., erect Colonial residence, 3394 Chevy Chase Drive, River Oaks; white painted br.ck, 11 rooms, 80-ft. facade, stable and paddock, 3-car garage with servants' quarters; Chas. W. Oliver, Archt.; River Oaks Corp., Contr., both River Oaks Bldg.

Tex., McAllen—M. H. Collins erecting 3 dwellings; total cost \$10,500.

Tex., Mercedes—Mrs. Loraine W. Allen, St. Louis, Mo., let contract at \$16,750 to Walter F. Chambers, San Benito, Tex., for Spanish type residence; hollow tile and stucco, 2 stories, tile roof; R. Newell Waters, Archt., Weslaco, Tex. 11-10

Tex., San Antonio—Davidson & English erecting 5 brick and rock dwellings, North Woodlawn Terrace; metal casements, composition tile and slate roof, metal lath.

Tex., Temple—Stanton & Campbell, Roddy Bldg., plan 128 dwellings within 2 to 4 years, connection with development of Park Lawn and Rose Lawn; cost \$4000 to \$25,000 each, brick, brick veneer, stucco and frame, various dimensions, hardwood and edge grain pine floors, concrete foundations, tile, composition and shingle roofs; architect and engineer not selected; owners build. See Want Section—Building Material and Equipment. 12-22

## Hospitals, Sanitariums, Etc.

Ga., Atlanta—Dr. W. F. McMahan, 36 Pine St., erect \$81,500 sanitarium, 1130 Spring St.; W. E. Eason, Archt.; L. A. Stow, Contr., 83 Marietta St.

Ga., Marietta—Dr. W. E. Benson and others let contract for \$50,000 hospital and doctors' building to L. A. Stow, 83 Marietta St., Atlanta; semi-fireproof, concrete and brick veneer, 2 stories and basement, 43x60 ft., with 38x54-ft. wing, marble trim, hardwood floors, tile promenade roof; remodel 40x56-ft. frame building, incinerator, 35 beds, Warren Webster modulation system of steam heat; S. D. Trowbridge, Archt., Forsyth Bldg., Atlanta. 11-17

La., Shreveport—R. G. Shisler, 2763 Fairfield Ave., has contract at \$21,576 for brick clinic, 2622 Greenwood Rd., adjoining Tri-State Sanitarium; E. A. George, Archt., Giddens-Lane Bldg.

Mo., Leeds—Kansas City, H. F. McElroy, City Mgr., let contract at \$70,565 to Edelman-Cahill Construction Co. for addition to tuberculosis sanatorium; plumbing, Interstate Plumbing & Heating Co., \$6600; heating, United States Engineering Co., 914 Campbell St., \$8525; wiring, W. L. Hutchison Electric Co., 306 E. 14th St., \$3258; 50 beds for negroes and 50 for white patients; Madorie & Blhr, Archts., 1105 Continental Bldg., all Kansas City. 12-1

## Hotels and Apartments

Fla., Fort Lauderdale—R. A. Mansfield Hobbs, 220 Broadway, New York, let contract to Gunn & Goll, Hahn Bldg., Miami, for remodeling Central Hotel in Central Arcade building; \$50,000; plumbing to Alexander Orr, 45 N. W. Third St.; George Bruce, Archt., Biscayne Bank Bldg.; both Miami. 12-29

Fla., Jacksonville—Mrs. F. A. Warner, Forbes and Acosta Apts., let contract to Herbert Parrish, 314 Duval Bldg., for \$9000, 2-story, frame and brick veneer flats, cor. Ernest and Copeland Sts.

Ky., Louisville—Harry Moores planning erection of 3-story business and apartment building at S. E. cor. Main St. and Woodland Ave.

La., New Orleans—Peter Trocchiano, 3228 S. Carrollton St., owner of building at cor. Prytania and Napoleon Ave., replace with \$67,000, 16-apartment house; J. M. Werling, Contr., 2909 St. Bernard St.

Mo., Kansas City—McCanles Building Co., 400 Victor Bldg., has permit for \$60,000, 9-story, brick and reinforced concrete, 112x81 ft. apartment building at 325 Ward Parkway; owner builds.

Mo., Ozark Beach—Crist Brothers erecting 123x45-ft., 3-story hotel; 40 rooms, 32 with bath; furnace heat.

Mo., St. Louis—M. Poppler, 3310 Ohio St., erect two 2-story, 34x48-ft. brick tenements, 4232-38 Humphrey St.; \$18,000; composition roofs; owner is Archt.-Builder.

Mo., St. Louis—Arsenal-Watson Co., 3358 N. Union St., erect two 2-story, brick, 34x45-ft. tenements, 4964-70 Eichelberger St.; \$16,000; composition roofs, hot air heat; owner is Archt.-Builder.

Mo., St. Louis—Joseph W. Kopman, Contr., 530 N. Union St., purchased site at 4529 Lindell Blvd.; plans to erect 10-story apartment building; 44 suites of 6 rooms, 2 baths and reception hall; plans include submerged garage for 60 cars, Venetian roof garden.

Mo., St. Louis—J. Malin, 1481 Blackstone St., erect \$10,000, 2-story, 36x56 ft., brick tenement at 1412-14 Blackstone St.; owner builds.

Mo., St. Louis—M. Bauman, 2220 Wainwright Bldg., let contract to Hamilton Construction Co., same, for two 2-story, 34x53-ft. brick tenements, 3953-57 Fairview St.; \$20,000; composition slate roof, hot air heat; E. F. Kraft, Archt., 2220 Wainwright Bldg.

Mo., St. Louis—L. L. Gieger, 2900 Pestalozzi St., erect \$15,000, 2-story, 32x100-ft. brick tenement, 2900-6 Pestalozzi St.; composition roof, furnace heat; owner builds.

Tenn., Knoxville—E. T. Russell, South Knoxville, let contract to W. A. Hart Construction Co., 400 W. Church St., for \$25,000, 16-room, 2-story apartment house on Laurel Ave.

Tex., Galveston—Jake Davidson, 2928 J St., let contract to Johnson Brothers for \$17,000, 2-story, brick veneer apartment building at Seventh St. and Avenue J; R. R. Rapp, Archt., both Guaranty Bldg.

Tex., Houston—B. N. Egan let contract to Benson-Hall Co., Humble Bldg., for \$12,000, 2-story brick veneer apartment building at La Branch and Wheeler Sts.

Tex., Houston—A. C. Polk, 139 Kingston Dr., let contract to Pearson Construction Co. for \$12,000, 2-story brick veneer triplex at 1802 Wentworth St.; 14 rooms and 3 baths.

Tex., Weslaco—Argentum Development Co. of San Antonio let contract to Walsh & Burney, 928 N. Flores St., San Antonio, at \$177,000 for 5-story, reinforced concrete, brick, hollow tile and stucco hotel building; total cost \$250,000; Paul G. Silber & Co., Archts., Bedell Bldg. 12-29

Va., Hopewell—Brown Supply and Building Co., Alexandria and Hopewell, broke ground for \$75,000, 3-story, 26-apartment building at Brown Ave. and Bridge St., City Point; store rooms on first floor.

Va., Norfolk—Morrison Construction Co., Inc., Law Bldg., started remodeling of first floor of Southland Hotel, provide 4 stores facing Granby St. and 3 on Freemason St.; \$47,000.

#### Miscellaneous

La., Rayville—Richland Parish Library Assn. erect 1-story, brick and stone library building, cost \$7500; oak floors, built-up roof, gas heat; J. J. Inelchen, Archt.-Contr. See Want Section—Building Materials and Equipment.

N. C., Statesville—Grier-Lowrance Construction Co. erect 2-story, 75x35 ft. building, Front and Center Sts., for Gray's Cafe.

Tex., Denton—Woman's Club let contract to H. F. Davidson for \$10,000 clubhouse in City Park; contain lounge or assembly room, dining room, kitchen, rest room and small rooms; W. G. Clarkson & Co., Archts., 610 First Natl. Bank Bldg., Fort Worth. 9-29

#### Railway Stations, Sheds, Etc.

Tex., Goose Creek—Missouri Pacific Railroad Co., C. S. Kirkpatrick, Ch. Engr., Gulf Coast Lines, Dallas, let contract to Allen & O'Rourke for 1-story, hollow tile, brick and stucco combination passenger and freight depot.

#### Schools

Ala., Riverview—Riverdale Cotton Mills let contract to West Point Iron Works, West Point, Ga., for 2-story and basement, 152x52-ft. school building; R. Kennon Perry, Archt., Wynne-Claughton Bldg., Atlanta.

Ark., Little Rock—Pulaski County Board of Education plans to expend \$100,000 to \$125,000 next spring and summer in constructing consolidated rural schools; D. T. Henderson, Supt.

Fla., Titusville—Brevard County Board of Public Instruction erecting \$100,975, 2-story, hollow tile, brick and concrete, 232x70 ft. high school building; concrete foundation, maple and terrazzo floors, tile and built-up roof; H. M. Griffin, Archt., 512½ Main St., Daytona Beach; J. E. Easterly, Contr. See Want Section—Building Materials and Equipment. 12-8

Ky., Greendale—Greendale High School Improvement Co., W. W. Greathouse, Pres., will erect \$30,000 brick school building; 4 classrooms, auditorium, office, teachers' room and kitchen.

La., New Orleans—J. A. Petty & Sons, Inc., Contrs., Godchaux Bldg., let following sub-contracts on parochial school building, St. Bernard Ave. between N. Roman and Derbigny Sts., for Our Lady of the Sacred Heart Congregation: Hardware, Stauffer Eshelman Co., 511 Canal St.; millwork, National Sash & Door Co., Inc., 600 N. Dupre

St.; tile roofing, Horace White, 200 Southern Bldg.; cast stone, Bowers Stone Manufacturing Co., 645 S. Murat St.; miscellaneous iron, James R. Sutton, 312 St. Joseph St.; sheet metal work, Acme Blow Pipe & Sheet Metal Works, 713 Magazine St.; painting, J. C. Maurer, 916 Union St.; waterproofing, D. S. Melvin, Whitney Bank Bldg.; glazing, J. J. Lips, Inc., 720 Perdido St.

La., Shreveport—Orange Car and Steel Co., Orange, Texas, received contract to fabricate 112 tons structural steel for \$377,000 Fair Park High School, for which Werner Co., Inc., Commercial Bank Bldg., has Gen. Contract. 12-29

La., Shreveport—Caddo Parish School Bd. let contract to Werner Co., Inc., Commercial Bank Bldg., at \$33,000, for rebuilding Cedar Grove School on Fairfield Ave., recently burned.

Md., Brunswick—Frederick County Board of Education let contract to Lloyd C. Culler, both Frederick, for 8-room and auditorium addition to high school; heating contract to Archie E. Fisher, at \$8000; John B. Hamme, Archt., both Frederick. 11-10

N. C., Durham—Huntington & Guerry Co., Greenville, S. C., received contract to install electrical wiring and fixtures in buildings being erected by Duke University. 11-3

Okla., Wynona—Board of Education let contract to Wilson Construction Co., Oklahoma City, at \$15,000, for brick and concrete school building; pine floors and finish; Tonini & Bramblett, Archts., 416½ W. Main St., Oklahoma City. 10-27

Tenn., Jamestown—State Dept. of Education, P. L. Harned, Commr., reported, let contract to Lynn A. Hayes, Dooley-Gillespie Bldg., Knoxville, at \$75,352, for elementary school and high school at Alvin York Institute; heating and plumbing, Tennessee Plumbing and Electric Co., Etowah, \$10,155; Manley, Young & Meyer, Archts., 302 N. Church St., Knoxville. 12-15

Tenn., Normal—State Dept. of Education, P. L. Harned, Commr., Nashville, let contract to J. C. Barker, 63 S. Third St., Memphis, for \$55,000, 2-story, brick and concrete, 137x134 ft. gymnasium at West Tennessee State Teachers' College; concrete foundation, composition roof; heating and plumbing to J. W. Hull Plumbing and Heating Co., 1144 Madison St.; electric work, McCrory Electric Co., 63 S. Third St.; sheet metal work, A. W. Burdick & Co., 554 Adams St.; lumber and millwork, Lee Lumber Co., 867 Raynor St.; stone work, Christie Cut Stone Co., 2082 Elzey St.; roofing, Bartholomew Roofing Co., 164 S. Second St.; George Mahan, Jr., Archt., American Bank Bldg.; all Memphis. 12-29

Tex., Clinton—Board of Trustees of Clinton Common School District No. 16 let contract to Peter Wicklund, 6415 Sherman St., at \$85,167 for 2-story, reinforced concrete, steel, hollow tile, brick, stone trim High School building; concrete tile to be supplied by Detering Concrete Tile Co., 3016 Washington St.; heating and plumbing to J. C. Nolan, 4405 Greely St., \$10,260; electrical work, Barden Electric & Contracting Co., 111 Main St., \$2240; John McLelland, Archt., 605 West Bldg., all Houston. 11-17

Tex., Houston—Board of Education of West University Independent School District, H. B. Schlesinger, Pres., 718 McKinney St., let contract to Northern Contracting Co. at \$61,725 for 2-story, fireproof, reinforced concrete, brick and tile Junior High School; electrical work to Jacob Bros. Electric Co., 1014 Prairie Ave., \$1895; plumbing to Lee Rogerson, 903 Truxillo St., \$3482; heating to Barber Plumbing Co., 1419 Paige St., \$4315; Lamar Q. Cato, Archt., Bankers Mortgage Bldg. 12-22

#### Stores

Fla., Jacksonville—A. S. Goffin, 1833 Boulevard, let contract to H. T. Connell, 405 W. 23d St., for \$11,500, 2-story, brick store and apartment building, 10th, between Liberty and Walnut Sts.

Ga., Atlanta—Draper & Owens Co., Grant Bldg., make alterations and repairs to brick building at 145-55 Piedmont Ave.; \$13,000; day labor.

La., Denham Springs—Denham Springs Farmers' Assn. let contract to W. M. Day, Annie Delphine Pl., Baton Rouge, for remodeling present mercantile building and construction new one; C. N. Durand received contract for new warehouse.

La., New Orleans—Arnand's Drug Co., Inc., let contract to Hyman Rabinowitz, 740 Poydras St., remodel and alter building at 201 S. Rampart St.

Miss., Greenville—Fred Wilzin, New York, let contract to Ernest Barbay, for 2-story, 39x104 ft., reinforced concrete, brick, tile and stone trim store and office building;

heating and plumbing to Fischer Plumbing & Heating Co., Memphis, Tenn.; electric wiring, Wiseman Electric Co.; tile and marble work, Frank Koestler; sprinkler system, Grinnell Co., Inc., Providence, R. I.; H. W. Lathrop, Archt.

Mo., St. Louis—Arsenal Watson Co., 3358 N. Union St., erect two \$12,000, 2-story, brick, 35x47 and 44x25 ft. stores and tenement buildings, 4972-6 Elcheberger and 4075-7 Gilles Sts.; composition roofs, hot air heat; owner is Archt.-Builder.

N. C., Asheville—J. L. Smathers & Son, 15 Broadway, remodeling and installing new front on building at 27 Broadway.

N. C., Burlington—Col. Finley L. Williamson let contract to Sam T. Johnson, Graham, for remodeling Williamson Bldg., W. Davis and Worth Sts., for stores; \$25,000; J. M. Workman, Archt., 111 N. Green St., Greensboro.

N. C., High Point—Mrs. H. R. Broadhurst let contract to A. F. Nance for 2-story, brick and stone, 49x40 ft., 3-store building on N. Main St. 12-29

Okla., Oklahoma City—R. C. Cavitt let contract to Kreipke Construction Co., Herskowitz Bldg., for \$12,000, brick and concrete store building; composition roof; Sorey & Vahlberg, Archts., Braniff Bldg.

Tex., Harlingen—John Baker started work on \$80,000, 2-story, 125x140-ft., brick and reinforced concrete store and office building; R. W. Mulhausen & Co., Archts.; R. P. Blythe, Contr.

Tex., Houston—L. M. Tinsley, 2023 Alban Rd., erect \$10,000, 1-story, brick building at 1309 Calhoun St.; A. C. Engelking, Contr.

Tex., Houston—Hylo Investment Co. let contract to Etie & Schmitz, 1004 Harvard St., at \$34,435, for 2-story, reinforced concrete, steel, hollow tile and brick store and apartment building, Washington Ave. and White St.; plumbing and electrical work in general contract; Joseph Finger, Archt., Keystone Bldg.

Tex., Junction—John Hankins let contract to B. O. Newby for 1-story and basement, 38x40-ft., brick, reinforced concrete frame store building; structural plans by W. E. Simpson Co., Engrs., 412 Natl. Bank of Commerce Bldg., San Antonio.

Tex., Port Arthur—H. W. Baird, Contr., 547 Proctor St., soon start work on \$35,000 to \$40,000, 4-store and 8-apartment building, Waco Ave. and Fifth St.

Tex., San Antonio—Matilde Elizondo, 701 S. Laredo St., let contract to R. C. Shane, Builders Exchange Bldg., at \$16,561, for 1-story, concrete frame, hollow tile and stucco, 6 stores and filling station, Laredo and Brazos Sts.; plumbing to Jud & Ormond, 703 N. Flores St., \$1361; L. Harrington Co., Archts.-Engrs., Builders Exchange Bldg.

Tex., Victoria—M. O. Simon let contract to Edward Wagner to remodel Kreisle building on S. Main St.

Va., Norfolk—S. D. Scott, Southgate Terminal, and John T. Campbell, Citizens' Bank Bldg., let contract to John H. Pierce, Law Bldg., for store building at 441-7 Granby St.

#### Theaters

Mo., St. Louis—G. M. G Corp let contract to W. H. Smith-Nelson-Cunliff Co., 110 N. Seventh St., for \$325,000 Community Building, Acme and W. Florissant Aves.; contain theater seating 1000 persons, 8 stores, basement billiard hall, 17 offices and assembly hall; Klingensmith & Wilkens, Archts., 317 N. 11th St.

Tex., Jacksonville—East Texas Theaters, Inc., J. C. Clemens, Pres. and Gen. Mgr., Beaumont, let contract to C. W. Marshall at \$24,000 for reinforced concrete, steel and brick theater building; Emile Well, Inc., Archts., Whitney Bank Bldg., New Orleans, La. 11-17

Tex., San Angelo—W. F. Curry let contract to Roy Smith, for \$24,000, 50x130 ft. theater building at cor. Second St. and Chadbourne Ave.; seating capacity 700.

Tex., San Marcos—F. W. Zimmerman, owner of Palace Theatre, making extensive improvements and remodeling.

W. Va., Point Pleasant—Lyric Amusement Co., Ross Filson, Mgr., erecting 40x135-ft., brick and tile, \$35,000 motion picture theater on Main St.; seating capacity 608; masonry work by Will Durst; carpenter work by Milton Selby.

#### Warehouses

Ala., Birmingham—Acme Co., 312 North 24th St., let contract to W. L. Coston, Bessemer, for \$90,000, 4-story and basement, reinforced concrete, 50x170 ft. warehouse and office building, Sixth Ave. and Seventh St.;



concrete foundation, cement floors, tar and gravel roof, vapor steam heat; Charles H. McCauley, Archt., 708 Jackson Bldg. See Want Section—Building Materials and Equipment.

Mo., Kansas City—Carter-Waters Corp., 2049 Main St., purchased tract on West Penn Way south of Terminal tracks; erect temporary building for present; probably erect permanent building later.

Tenn., Memphis—Mr. Bowers Stores Corp., Joe Fly, Pres., erecting \$300,000 headquarters and distributing warehouse, Florida Ave. and Texas St., to be completed June 1; include cold storage plant of 18 car capacity; J. Frazier Smith and H. M. Burnham, Archts., Goodwyn Institute Bldg.; Gardner & Howe, Engrs., Porter Bldg.; F. J. Ozanne & Co., Gen. Contrs., Empire Bldg.; following sub-

contracts let: Plumbing, Pritchard Brothers, 433 Madison St.; heating, Southern Heating Co., 145 S. Third St.; wiring, Electric Novelty Co., 124 Monroe St.; ice machinery, York Products Corp.; cork insulation, L. Mundet & Son, Inc., 100 S. 11th St., Brooklyn, N. Y.; refrigerator ventilation, Charles A. Moore; elevators, Otis Elevator Co., 248 Court St.; sprinkler system, Independent Aetna Sprinkler Corp., 2325 N. 11th St., Philadelphia, Pa.

## WANT SECTION

### THE CLASSIFICATIONS IN THIS SECTION ARE:

#### Machinery and Supplies

Under this heading are reported requests for data, prices and literature and information on machinery, supplies and miscellaneous materials of a wide variety.

#### Building Materials and Equipment

This division comprises all classes and kinds of materials and equipment used in building and construction projects of every kind.

#### Bids Asked

Includes bids asked by U. S. Government, States, districts, municipalities, firms and individuals for machinery, materials, supplies and construction work.

Items in this department are published without charge and these columns are open for the publication of wants of all kinds relating to construction work, machinery, materials and supplies.

### Machinery and Supplies

**Boilers.**—R. P. Johnson (Mchy Dealer) Wytheville, Va.—Wants dealers price on two or more 75 to 100 h.p. locomotive type boilers on skids, with stack and all fittings, good for not less than 100 lbs. steam working pressure.

**Boiler Repair Tools.**—B. W. Stringfellow, Culpeper, Va.—Wants set tools for repairing steam boilers, new or second-hand.

**Elevator (Freight), etc.**—The Page Milling Co., Luray, Va.—Wants service elevator, total height 55-ft.; electric power head for 2000-lb. freight elevator, total lift 25 ft., current used 220 volt, 60 cycle, 3 phase.

**Locomotive.**—M. K. Frank, Park Row Bldg., New York City.—Wants second-hand narrow gauge m.e. locomotive, steam driven saddle tank, 48-in. gauge, weight 20 to 25 tons; state price, manufacturers name, serial number and location.

**Motor.**—V. M. Nussbaum & Co., 220 Montgomery St., Fort Wayne, Ind.—Wants 150 h.p., 600 r.p.m., 440 volt, 3 phase, 60 cycle, 3 bearing squirrel cage or slip ring type motor with base and starter, but without pulley.

**Pulverizing and Powdered Coal Burning Equipment.**—Citizens Crystal Ice Co., Inc., Box 854, Roanoke, Va.—Wants data on equipment for pulverizing and burning powdered coal; equipment for individual domestic furnace heaters to a district heating plant; correspond with manufacturers.

**Wet Pan.**—The Good Roads Supply & Machinery Co., Dublin Ave., Columbus, Ohio.—Wants one 8 or 9-ft. wet pan, standard make, give full specifications, condition, price and location.

**Ding-Dong Food Products Mfg. Co., Inc.**, Davidson St., Arlington, Tex.—wants following to install in plant to manufacture jellies, jams, condiments, etc.:

- (1) Conveyors
- (2) Closing Machines
- (3) Labeling Machines

**Nants & Co., R. A. Nants, Pres.**, Live Oak, Fla.—wants following equipment for manufacture hampers, crates, etc.:

- (1) Lathe—veneer
- (2) Clipper
- (3) Corrugated Staple Driver
- (4) Bottom Rounder—Trevor
- (5) Saw Rigs—one heading and one drag.

**Bell-Davis Machinery Manufacturers, Inc.**, Pleasant Hill, Mo., will manufacture an all purpose saw rig and patented shingle mill attachment for ordinary standard saw rig; wants prices on following:

- (1) Gears.
- (2) Steel Wheels.

**Hackley Morrison Co., Inc.** (Mchy. Dealer), 204 N. Jefferson St., Richmond, Va.—Wants following equipment:

- (1) Engine and Generator—80 h.p. oil
- (2) Motors—one 20 h.p., two 15 h.p., two 10 h.p. and two 5 h.p. motors, 3 phase, 60 cycle, 220 volt, 1200 r.p.m. induction, complete with base, pulley and starter.

**Brown-Craven Equipment Co.**, 706 Manning St., N. Chattanooga, Tenn.—wants the following:

- (1) Boiler—60 h.p. locomotive type.
- (2) Buckets—one 2-vd. Hayward rehandling and one 2-vd. digging.
- (3) Derrick—15 or 20 ton stiff leg, 14x14 timbers, American preferred.
- (4) Engine—6x8-in. independent swinging, with or without boiler.
- (5) Hoist—80 h.p. triple drum electric, with independent swing; one 10x12 steam, with boiler.

**Hackley Morrison Co., Inc.** (Mchy. Dealer), 204 N. Jefferson St., Richmond, Va.—wants following:

- (1) Cars—fifteen 4-yd. 2-way, 36-in. gauge dump, either K & J or Western
- (2) Compensators—one 7½ h.p., one 10 h.p. and one 15 h.p., 3 phase, 60 cycle, 220 volt starting, with no load and overload cut out.

#### Miscellaneous

**Bone Oil, etc.**—E. G. Hay, Box 2945, Ft. Lauderdale, Fla.—wants prices on bone oil and coal oil tar acid.

**Furniture (Wicker).**—J. W. Bell, Importer, Paragould, Ark.—Wants data on wicker furniture; correspond with manufacturers.

**Granite Rip Rap.**—Miami Towing and Lightering Corp. (Contrs.), 764 N. W. N. River Drive, Miami, Fla.—Wants considerable amount of granite rip rap weighing ½ to 10 tons, delivery Miami by water.

**Lamps (Carbide).**—J. S. Wilson, Bailey, N. C.—Wants data and prices on lamps that burn carbide to take the place of kerosene lamps such as used in homes in rural districts.

**Lightning Rods.**—R. C. Elliott, Burkeville, Va.—Wants data on lightning rods; correspond with manufacturers.

**Tar.**—W. T. Gilbert, 302 Prospect St., Torrington, Conn.—Wants prices on tar to meet engineers' specifications for tar sub-floors same as laid in textile mills; correspond with dealers; prefer those located in Virginia, North Carolina, South Carolina and Tennessee on account freight charges.

**Theater Furnishings and Equipment.**—N. L. Royster, Pres. Circle Amusement Co., Inc., P. O. Box 1131, Charlotte, N. C.—Wants data and prices on chairs, machines, carpets, organ and other equipment for \$400-600 theater.

**Trees.**—State Highway Dept., Dover, Del.—Receives bids Jan. 25, 1928, to furnish trees for planting along State Highways as follows, f. o. b. Dover: Contr. M: 1500 red and white oak; 200 dogwood; 300 elm and 1000 oriental planes.

**Lee Paul of the Paul Realty Co., Chatham, Va.**, wants data and prices on flumes and equipment used for transporting logs in connection with proposed timber cutting operations; has several million feet of lumber that would be marketable if it could be properly transported to mills.

**C. A. Benton**, 1017 Fairview cor. Lincoln St., Houston, Tex.—wants data on equipment and raw material for manufacture of "Dryice."

**Wilson-Hock Co.** (Mchy. Dealer), Hope-well, Va.—Wants manufacturers prices for resale on following:

- (1) Ranges—double oven, hotel type
- (2) Tables—round and square for hotel dining room use, finished and unfinished.

**Board of Park Commrs.**, J. G. Goss, Mgr., Louisville, Ky.—wants prices on following for municipal park development:

- (1) Mowers
- (2) Screens, etc.
- (3) Soil Shredders.

**Seaver Manufacturing Co., Inc.**, E. Sevenmore St., Greensboro, N. C.—wants following for manufacture children's dresses:

- (1) Broadcloth
- (2) Gingham
- (3) Print Goods
- (4) Thread and all kinds of supplies.

### Building Material and Equipment

**J. E. Easterly, Contr.**, Titusville, Fla.—wants prices on following for \$100,975 High School:

Flooring—terrazzo  
Slate Blackboards.

**Charles H. McCauley, Archt.**, 708 Jackson Bldg., Birmingham, Ala.—wants prices on following for \$90,000 warehouse and office building:

Cast Stone  
Elevator  
Flooring—cement  
Metal Doors (roll and tin clad)  
Roofing—built-up  
Sprinkler System  
Tile—hollow  
Wire Glass.

**Platoff & Bush, Inc., Contrs.**, 122 W. Liberty St., Louisville, Ky.—wants prices on following for \$800,000 Commodore Apartment building:

Electric Refrigerators  
Elevators  
Flooring—composition, hardwood, linoleum, terrazzo and tile  
Marble  
Roofing—built-up  
Tile—gypsum, hollow and interior  
Terra Cotta Trim.

**Stanton & Campbell, Roddy Bldg.**, Temple, Tex.—wants prices on following for dwellings, cost \$4000 to \$25,000 each:

Refrigerators  
Flooring—hardwood, linoleum, terrazzo, tile, composition  
Incinerators  
Roofing—asbestos shingle, tile  
Tile—gypsum.

**J. J. Ineichen, Archt.-Contr.**, Rayville, La.—wants prices on following for library building:

Brass or Bronze Work  
Flooring—hardwood, terrazzo and tile  
Marble  
Metal Ceilings and Doors  
Roofing—built-up  
Steel Sash and Trim  
Terra Cotta Trim  
Wire Glass.

**D. L. Stanfield, Chmn. Board of Trustees** of Reidville School District, Reidville, Ga.—wants prices on following for \$50,000 school:

Metal Doors  
Roofing—asbestos shingle and asphalt shingle.

**F. L. Flynn**, 1221 Van Buren St., Harlingen, Tex.—wants prices on following for residence:

Cast Stone  
Electric Refrigerators  
Flooring—hardwood, tile  
Roofing—built-up, tile  
Tile—hollow.

**Phillip Asbell**, 2901 Violet Ave., Baltimore, Md.—wants prices on following for several cottages:

Cast Stone  
Flooring—hardwood, tile  
Limestone  
Roofing—asbestos shingle  
Sprinklers.  
Also wants sub-bids on:  
Carpentry  
Electrical Work  
Heating  
Plastering  
Plumbing  
Roofing.

Sylvester Lewis Realty Co., owners-builders, 4919 Natural Bridge, St. Louis, Mo., wants prices on following for \$20,000 stores and hall:

#### Metal Ceilings.

### Bids Asked

**Boiler-Furnace Draft Control System.**—W. Oscar Orr, West Ave., Kannapolis, N. C. Wants data on boiler-furnace draft control systems; correspond with manufacturers.

**Bolts.**—U. S. Engr., Huntington, W. Va.—Receives bids Jan. 7 for machine and carriage bolts.

**Bottles, Jars, etc.**—U. S. Veterans Bureau, Supply Div., Washington, D. C.—Receives bids Jan. 10 for 15 gross flint glass bottles, 200 heavy glass jars, 24 Pyrex glass flasks.

**Bridge.**—DeRidder, La. See Construction News—Roads, Streets, Paving.

**Bridges.**—State of Tennessee receives bids for 6 bridges. See Construction News—Roads, Streets, Paving.

**Bridges.**—Wharton, Tex., receives bids for 2 bridges. See Construction News—Bridges, Culverts, Viaducts.

**Bridge.**—State of Texas receives bids for 2 bridges. See Construction News—Bridges, Culverts, Viaducts.

**Bridges.**—State of Virginia receives bids for 2 bridges. See Construction News—Roads, Streets, Paving.

**Castings.**—District Commrs., Washington, D. C.—Receives bids Jan. 10 for miscellaneous castings for use during six months ending June 30; including 200 manhole frames, 650 covers, 5 frames 50 valve castings, 155 valve covers and 2500 miscellaneous castings.

**Chair Parts.**—Quartermaster, Marine Corps, Washington, D. C.—Receives bids Jan. 6 for 75 opera chair backs, 25 opera chair seats and 75 opera chair arm rests.

**Concrete Porch Floor.**—U. S. Veterans Bureau, Const. Div., Room 791, Arlington Bldg., Washington, D. C.—Receives bids Jan. 24 to furnish labor, equipment and materials for concrete porch floor for main building at U. S. V. Hospital No. 62, Augusta, Ga.

**Culverts.**—State of Alabama. See Construction News—Roads, Streets, Paving.

**Earthwork.**—Northern Mississippi River Comn. Dist., office of Dist. Engr., Room 435 Customhouse, St. Louis, Mo.—Receives bids Jan. 10 to construct about 7000 cu. yds. earthwork in Levee Dist. No. 1, Perry County.

**Earthwork.**—Office of District Engr., Northern Mississippi River Comn., 435 Customhouse, St. Louis, Mo.—Receives bids Jan. 10 for about 7000 cu. yds. of earthwork in levee district No. 1, Perry County, Mo.

**Electric Ranges.**—U. S. Veterans Bureau, Supply Div., Washington, D. C.—Receives bids Jan. 6 for 6 right hand and 6 left hand oven electric ranges.

**Electrical Supplies.**—Marine Corps, Quartermaster's Dept., Washington, D. C.—Receives bids Jan. 9 to furnish electrical supplies; delivery Quantico, Va. Sch. 349.

**Electric Work.**—Quartermaster, Wm. Beaumont, General Hospital, El Paso, Tex.—Receives bids Jan. 19 for reconstructing electric wiring system and underground telephone system at William Beaumont General Hospital.

**Fire Extinguishers.**—U. S. Engr., Huntington, W. Va.—Receives bids Jan. 9 for 12 chemical fire extinguishers.

**Floor Machines.**—U. S. Veterans Bureau, Supply Div., Washington, D. C.—Receives bids Jan. 9 for two 18-in. and eight 12-in. floor machines.

**Footways.**—Baltimore, Md. See Construction News—Roads, Streets, Paving.

**Grease Guns.**—Purchasing Agt., Post Office Dept., Washington, D. C.—Receives bids Jan. 9 for 150 grease guns.

**Hexagon Nuts.**—Purchasing Agent, Post Office Dept., Washington, D. C.—Receives bids Jan. 11 for 115,000 hexagon nuts.

**Hospital Supplies.**—U. S. Veterans Bureau, Supply Div., Washington, D. C.—Receives bids Jan. 11 for hospital supplies.

**Hubometers.**—Purchasing Agt., Post Office Dept., Washington, D. C.—Receives bids Jan. 6 for 5 hubometers.

**Lantern Globes.**—U. S. Engr., Huntington, W. Va.—Receives bids Jan. 7 for 170 doz. lantern globes.

**Laundry.**—U. S. Veterans Bureau, Const. Div., Room 791, Arlington Bldg., Washington, D. C.—Receives bids Jan. 31 for construction laundry at U. S. V. Hospital, No. 74, Gulfport, Miss.; work includes excavating, plain and reinforced concrete, hollow tile, brick work, metal and built-up roofing, roof ventilators, copper gutters and down-

spouts, steel trusses, metal lathing, painting, plumbing, heating, electrical work, etc.

**Lumber.**—Quartermaster, Marine Corps, Washington, D. C.—Receives bids Jan. 6 for 30,000 ft. b.m. white pine lumber.

**Manilla Rope.**—U. S. Engr., Huntington, W. Va.—Receives bids Jan. 9 for 10 coils manilla rope.

**Miscellaneous Supplies.**—Panama Canal, A. L. Flint, General Purchasing Officer, Washington, D. C.—Receives bids Jan. 6 for pure iron sheets and other miscellaneous materials. Sch. 1850.

**Motor Boat.**—District Commrs., Washington, D. C.—Receives bids Jan. 23 for one 28-ft. double cockpit motor patrol boat.

**Paper.**—Joint Committee of Printing, Capitol, Washington, D. C.—Receives bids Jan. 30 for furnishing paper for public printing and binding for one year beginning March 1, deliveries to be made f. o. b. Washington; blank proposals containing instructions, schedule, specifications accompanied by standard samples, obtained from George H. Carter, Public Printer.

**Paper Bags.**—Quartermaster, Marine Corps, Washington, D. C.—Receives bids Jan. 7 for 170,000 Kraft paper bags.

**Pine Flooring.**—Commanding Officer, Aberdeen Proving Ground, Md.—Receives bids Jan. 10 for 1 carload pine flooring.

**Pipe.**—U. S. Engr., Jacksonville, Fla.—Receives bids Jan. 7 for hammer welded pipe.

**Pipe (Sewer).**—Board of Awards, Baltimore, Md., Milton J. Duark, Sewerage Engr.—Receives bids Jan. 11 for furnishing and delivering vitrified terra cotta sewer pipe, Material Contract No. 68.

**Pipe.**—See Sewers.

**Pipe (Water).**—Board of Water Commrs., Williamsport, Md.—Receives bids Jan. 16 for furnishing and delivering cast iron bell and spigot water pipe and special castings, work includes approximately 340 tons of 4 to 10-in. pipe and special castings; Whitman, Rehardt & Smith, Engr., Baltimore.

**Radial Chimney (Brick).**—Purchase Section, Bureau of Standards, Room 801, Northwest Bldg., Washington, D. C.—Receives bids Jan. 13 for construction of radial brick chimney 10x200 ft. for power plant building; blue prints and specifications on application.

**Road.**—DeRidder, La. See Construction News—Roads, Streets, Paving.

**Road.**—State of Virginia. See Construction News—Roads, Streets, Paving.

**Road.**—Houston, Tex. See Construction News—Roads, Streets, Paving.

**Roads.**—St. Augustine, Fla., receives bids for 5 roads. See Construction News—Roads, Streets, Paving.

**Roads.**—State of Tennessee receives bids for 3 roads. See Construction News—Roads, Streets, Paving.

**Roads.**—Baton Rouge, La., receives bids for 3 roads. See Construction News—Roads, Streets, Paving.

**Roofing.**—Treasury Dept., office of Supv. Architect, Washington, D. C.—Receives bids Jan. 13 to construct roof over west mailing platform and skylight over west vestibule at U. S. post office and court house, San Antonio, Tex.

**Rubber Sheetting.**—U. S. Veterans Bureau, Supply Div., Washington, D. C.—Receives bids Jan. 10 for 500 yds. rubber sheetting, 54-in. wide.

**Sewers.**—City of Huntington, W. Va., Homer L. Yeich, Commr. of Streets.—Receives bids Jan. 9 for lateral sewers on various street.

**Sewers.**—City of Sonora, Tex., W. C. Gilmore, Mayor.—Receives bids Jan. 6 for purchase of material for sanitary sewer system, including sewer pipe, manhole rings and covers; Municipal Engineering Co., Inc., Engrs., Athletic Club Bldg., Dallas.

**Sewers.**—District Commrs., Room 509 District Bldg., Washington, D. C.—Receives bids Jan. 10 for 10,129 ft. of sewer from 10-in. to 6 ft. in diam.

**Speedometers.**—Purchasing Agt., Post Office Dept., Washington, D. C.—Receives bids Jan. 6 for 600 speedometers.

**Steel Shelving.**—Purchasing Agent, Post Office Dept., Washington, D. C.—Receives bids Jan. 11 for 2 sections steel shelving.

**Street.**—Arlington, Tex. See Construction News—Roads, Streets, Paving.

**Street.**—Baltimore, Md. See Construction News—Roads, Streets, Paving.

**Street.**—Opelousas, La. See Construction News—Roads, Streets, Paving.

**Thermometers (Clinical).**—U. S. Veterans Bureau, Supply Div., Washington, D. C.—Receives bids Jan. 9 for 18,000 clinical thermometers, Fahrenheit scale.

**Tool Grinder.**—Bureau of Supplies and Accounts, Navy Dept., Washington, D. C.—Receives bids Jan. 10 for tool grinder.

**Tractors, etc.**—Charles E. Gross, Dallas County Auditor, Dallas, Tex.—Receives bids Jan. 9 for one or more 5 ton 35 h.p. on draw bar and 44.1 h.p. S. A. E. rating crawler tractor without top, f. o. b. Dallas.

**Truck Wheels.**—Post Office Dept., Washington, D. C.—Receives bids Jan. 11 for 200 truck wheels.

**Voltmeters.**—Marine Corps, Quartermaster's Dept., Washington, D. C.—Receives bids Jan. 6 to furnish voltmeters, delivery Marine Barracks, Navy Yard, New York City. Sch. 352.

**Water Tank.**—Bureau of Yards and Docks, Navy Dept., Washington, D. C.—Receives bids Jan. 18 for steel water tank at marine barracks, Parris Island, S. C.

**Water Works.**—City of Hickory, N. C., J. D. Elliott, Mayor, William C. Olsen, Inc., Engrs., Raleigh, receives bids Jan. 18 for water works improvements, including furnishing and delivering f. o. b. cars two motor driven centrifugal pumping units, complete; one gasoline engine driven centrifugal pumping unit, complete; furnishing labor and material and laying 2 miles of 16-in. cast iron water pipe; furnishing labor, materials, etc., for and constructing raw water pumping station and intake.

**Welding Supplies.**—Marine Corps, Quartermaster's Dept., Washington, D. C.—Receives bids Jan. 9 to furnish welding supplies; delivery Hampton Roads, Va. Sch. 353.

**Whistles.**—Purchasing Agt., Post Office Dept., Washington, D. C.—Receives bids Jan. 11 for 750 air compression whistles.

**Wood Stave Pipe.**—A. Y. Walton Bexar-Medina-Atascosa Counties Water Improvement District No. 1.—Receives bids Jan. 25 at office at Natalia, Tex., for furnishing necessary materials, equipment, and labor for constructing a continuous wood-stave pipe of 49-in. interior diam. and 4100 ft. long at Noonan, together with wooden cradles, 2 manholes and blow off valve; district to do all excavation and backfill; E. P. Arneson, District Engr., 422 Gunter Office Bldg., San Antonio.

**X-Ray Equipment.**—U. S. Veterans Bureau, Supply Div., Washington, D. C.—Receives bids Jan. 7 for x-ray equipment.

### Trade Literature

#### New Hays Recorder Catalogue.

The Hays Corporation, Michigan City, Ind., has published Catalogue RL-27, which treats of the Hays Automatic CO<sub>2</sub> and Draft Recorder. The manufacturers say that "19 years have been spent in developing the present Hays recorder and that, embodying as it does the best features of design and construction which have stood the test of time in thousands of predecessors, this simplified and improved machine is truly an heir of the past. In addition, it offers new simplicity, ruggedness and accessibility, new beauty of appearance and operation. It is a husky precision instrument built to give daily service in the ordinary boiler room, and this with a minimum of attention and expense. We are interested in eliminating needless fuel waste through the application of up-to-date scientific methods. We have chosen to specialize on combustion problems."

#### Georgia Power Company's Calendar.

The Georgia Power Company, P. S. Arkwright, president, Atlanta, has issued a substantial and practical office calendar for 1928, with the compliments of its public relations department. It is mounted upon a strong backing, to which a series of daily sheets for the entire year is firmly bolted, so that each can be torn off as each day passes. The first sheet says: "This calendar is published for employees of the Georgia Power Company in the hope that a daily reminder of some of the memorable facts about our State and its historic figures may help them in their desire to be better citizens of Georgia."



**Calendars for 1928.**

The Garlock Packing Company, Palmyra, N. Y., has issued a fine, practical calendar of the hanger type for business men, three months to a page and each page carrying a picture, the whole being done in red, yellow and black, an excellent combination. Another calendar of the same type is that of the Wellman-Seaver-Morgan Company, Cleveland, Ohio, which also has three months to a page, with an appropriate picture at the top of each sheet, the colors being orange, gray and black in fine taste. The calendar of the Georgia Power Company, Atlanta, is a very artistic combination. It is done in colors and the picture at the top of each sheet is very attractive. "Universal Safety" is the motto of the calendar and the idea of safety in work is emphasized throughout. The Hercules Power Company, Wilmington, Del., has a fine calendar this year, with picture in colors, representing a gunner and his dog, with a boy holding open a garden gate, the title being "This Trip We All Go." This is a companion picture to one on the calendar for 1918, which represented a soldier with his rifle starting for the front and saying to his dog: "Not This Trip, Old Pal." The sheets carry three months to a page. The De La Vergne Machine Company, 978 East 138th street, New York city, has a practical business calendar, with picture of one of the Diesel engines built by the company, three months being on each of the sheets. Henry A. Kries & Sons Company, Baltimore, Md., manufacturers and machinists, steam and mill supplies, etc., have a pretty calendar, with picture in Japanese style, having rich colors showing a water and mountain scene, the date sheets being immediately below. The Thew Shovel Company, Lorain, Ohio, have a hanger calendar in colors, with three months to a page and pictures of their excavating machines engaged in operations on different kinds of work. The Carborundum Company, Niagara Falls, N. Y., has issued a fine wall calendar with all months on a single sheet, the upper section of which is devoted to a panoramic view of Niagara Falls in the rich colors of autumn. There are also two smaller pictures, one of them showing carborundum in its beautiful shades of blue and green and the other showing aloxite in its pretty lilac hues, both materials being represented as they come from the electric furnace.

**Domestic Pump Bulletin.**

An eight-page bulletin of the Domestic Engine and Pump Company, Shippensburg, Pa., comprehensively describes and illustrates the Domestic Giant Triplex Pumps, which are high-pressure pumping units that are self-oiling, enclosed and roller-bearing equipped; they are mounted on spring trailer trucks. The capacity range is from 60 to 150 gallons per minute and for pressures up to 500 pounds. The bulletin says that from a water supply standpoint these pumps place the mountain road builder on a par with the contractor laying concrete at the river's edge. Detailed information concerning the pumps is given, together with valuable and useful tabulated data.

**Erie City Iron Works Bulletins.**

The Erie City Iron Works, Erie, Pa., manufacturers of powdered fuel equipment, steam boilers and engines, grey iron castings and fabricated steel, have issued two new bulletins, one of which has eight pages, reproducing a paper by Prof. W. J. Wohlenberg, M. S., M. E., entitled "Some Fundamentals of

Water Cooled Furnace Design." This is appropriately illustrated to round out the subject. The other bulletin, which is of four pages, illustrates and describes the Erie City Vortex furnace for the burning of pulverized coal. It is stated that in this furnace the fuel jet is entirely surrounded by a tube of incandescent refractory. Unusual efficiency and economy are features.

**A Fine and Useful Cotton Gin Catalog.**

A beautiful and artistic production is Catalogue No. 143 of the Continental Gin Company of Birmingham, Ala. It is a comprehensive showing of modern cotton ginning machinery for the cleaning and handling of cotton and cottonseed. The large inset folding pages, done in colors, showing the saw Continental air-blast outfits and also the company's saw and brush outfits, are especially fine and full of detail. But there are also many other pictures of cotton ginning machinery distributed throughout the rest of the 84 pages composing the book, which is large and handsome. Everything about the catalogue from the first to the last page is of the highest order of skill, so that it constitutes a valuable reference book to everyone concerned with the ginning of cotton. In addition to Birmingham the company has plants at Atlanta, Memphis, Prattville and Dallas.

**Blue Oglesby Granite From Georgia.**

The Oglesby Granite Quarries, Elberton, Ga., have issued a finely illustrated booklet representing monuments, mausoleums and memorials built of the blue Oglesby granite, the texture of which is beautifully shown by a picture. The channeling method is employed in quarrying, with the result that sound stock and good patterns are obtained. Two of the full-page pictures represent sections of the quarries, so that the reader may understand just how accurately the stone is taken out. The printed descriptive material gives full particulars.

**Flexitallic Gaskets Described.**

A handy folder and price list has just been published by the Flexitallic Gasket Company of Camden, N. J., giving complete information for ordering the Flexitallic gaskets for pipe flanges, tube caps and manholes. It includes dimensions, prices, a list of more than 20 boilers to which tube cap gaskets are applicable, and it also illustrates and explains why this particular make of gasket should be used as a matter of preference. The gasket is flexible and it is partly metallic, but it contains more asbestos than metal. With one of these gaskets it is said that less pressure is needed to make a tight joint, saving time, money and labor.

## INDUSTRIAL NEWS OF INTEREST

Items of news about industrial, railroad or financial interests, building operations, construction work, municipal improvements, or the sale of machinery or the letting of contracts in the South or Southwest, are invited from our readers, whether they are advertisers, or subscribers, or not. We invite information of this character from readers in the North and West about their Southern business operations, as well as from Southern readers. News of value will be published just as readily when from non-advertisers as from advertisers.

**Sales Agents for Schofield Excavators.**

The Mundy Sales Corporation, 30 Church street, New York city, has just completed negotiations with the Schofield-Burkett Construction Company of Macon, Ga., for the exclusive sale of the Schofield excavator in the United States and Canada and also for export. The Schofield excavator was first built to dig tough clay encountered when stripping overburden at brick plants. It was designed by I. E. Burkett about 25 years ago when he was operating a clay bank in Georgia to enable him to work more economically. This led to the Schofield-Burkett Construction Company, which was incorporated in 1911. It is said that the cost of excavating with these machines is as low as five cents per cubic yard of material.

**Harvey Hubbell, Jr., Elected.**

At a meeting of the board of directors of Harvey Hubbell, Inc., Bridgeport, Conn., held December 27, Harvey Hubbell, Jr., was elected president and treasurer of the corporation to succeed the late Harvey Hubbell, Sr. For a number of years Harvey Hubbell, Jr., has been associated with his father in the management of the business. No changes in the established policies of the company are contemplated.

**Installs New Moore Kilns.**

The Jonas Furniture Company, Lenoir, N. C., formerly known as the Star Furniture Company, is installing two automatically controlled Moore Moist Air Dry Kilns. These kilns, built by the Moore Dry Kiln Company, Jacksonville, Fla., will have a holding capacity of 50,000 feet and will be operated by the "Charge" method. They will be used for drying hardwood for manufacturing high-grade furniture.

**Concrete Mixer Salesman Wanted.**

The Republic Iron Works, Tecumseh, Mich., according to a formal announcement that appears elsewhere in this issue, is in search of a capable man to take over and organize a sales territory, to place dealers and work with their salesmen for a high-grade, complete line of concrete mixers. Particulars will be found in the advertisement.

**Joseph S. Mitchell.**

The sudden death of Joseph S. Mitchell on December 22 has been announced by the Sullivan Machinery Company, Chicago, Ill. Mr. Mitchell had been at the head of the diamond drill department of the company, both contracting and sales, since the death of Thomas L. Dee, and his connection with the organization continued over many years. He had a remarkable knowledge of the science of diamond drilling in all its phases and his passing, it is remarked, constitutes a distinct loss to the engineering profession and also to his associates.

**New Generating Equipment for Scout Cruisers.**

An entirely new design of turbine-generating equipment, combining features of light weight and compact design, will be installed in light cruisers Nos. 24, 25, 26, 27, 30 and 31, now being built by the United States Navy. These cruisers are the first ships projected since the Limitation of Arms Conference in 1921. A total of 24 turbine-generator sets is involved, four sets to be installed in each vessel. Each set is rated 250 kilowatts, and the electricity generated will be used for furnishing light and auxiliary power. The 24 sets are being built by the General Electric Company, Schenectady, N. Y.

### Southeastern States Show Great Industrial Growth.

Tremendous industrial development in the Southeastern States, "where manufacturing is increasing one and a half times faster than for the country as a whole," is pictured in a commercial survey of Alabama, Florida, Georgia, North Carolina, South Carolina and Tennessee, by John M. Hagar of the United States Department of Commerce. From 1914 to 1925, he shows that manufacturing in the Southeastern States increased 203 per cent, and in the United States as a whole 159 per cent.

More in detail, Mr. Hagar says that manufactured products originating in the Southeast more than tripled in the 12 years mentioned, the increase being from \$1,154,000,000 to \$3,494,000,000. Also, hydro-electric power generated in the States mentioned increased since March, 1925, 31 per cent, or more than double the rate of increase for the United States as a whole.

"While the industrial activities of this general area are attracted by raw materials, power, climate, transportation and proximity to great consumers markets," Mr. Hagar pointed out that "probably the greatest single factor is that of labor—it is a case of capital and industry going to the labor supply."

During the period of 1923 to 1925 the combined products of the States mentioned have increased by \$305,138,380, furnishing the following figures: Alabama increase, 2.3 per cent; Florida, 4.4 per cent; Georgia, 7.4 per cent; North Carolina, 10.4 per cent; South Carolina, 3.6 per cent; Tennessee, 10 per cent; Southeastern States, 9.6 per cent; entire United States, 4.1 per cent.

The total value of manufactured products increased from 1914 to 1925 as follows: Alabama, from \$178,798,000 to \$552,824,000, or 209.2 per cent; Florida, \$81,112,000 to \$267,000,000, or 229.2 per cent; Georgia, \$253,271,000 to \$648,852,000, or 156.2 per cent; North Carolina, \$289,412,000 to \$1,050,434,000, or 263 per cent; South Carolina, \$138,891,000 to \$373,360,000, or 168.8 per cent; Tennessee, \$212,071,000 to \$601,488,000, or 183.6 per cent; total, from \$1,153,555,000 to \$3,493,968,000, or 202.9 per cent; total for the United States, from \$24,246,435,000 to \$62,705,714,000, or 58.6 per cent.

"The textile industry in the cotton growing States," the report says, "has been expanding at a rate which has put it ahead of that of all other States combined in the consumption of cotton."

Other industries, such as wool, silk, rayon, worsted goods, twine and cordage, dyeing and finishing, are located in Tennessee and the Carolinas, some organized on a large scale. The textile and knit goods industries form one of the first important developments in the general industrialization of the Southeast, according to the report.

"Reasons for this strong movement of the textile industry," the report adds, "may be found in its abundance of fuel and water-power, relatively cheaper labor supply, special tax inducements, encouragement by the railroads and municipalities and, in some instances, proximity to materials, although this seldom is an important factor." The report continues:

"That the Southeast offers opportunity for manufacture and allied commercial activities is unquestioned. As a market, its importance has hardly been realized, either by the nation or by its own people, but the field is promising and growing. As a region endowed with extremely favorable topography, climate, natural resources, raw materials and labor, it should continue to experience an expanding industrialism."

Building permits issued in St. Louis for November represented a cost of construction of \$5,854,759, as compared with a total of \$3,029,130 for the corresponding month of 1926.

### To Extend High-Tension Line.

Following its recent acquisition of the electrical distribution system and ice and cold storage plants at McRae, Ga., the Georgia Power Company, Atlanta, will extend its 44,000-volt high-tension line to McRae. A transformer station will be built at McRae to reduce the voltage to 2300 volts for local distribution. Upon completion of the new transmission line, the town of Helena, adjoining McRae, will also be served with hydro-electric power.

### To Pay \$500,000 for 2500-Acre Tract for Flying School.

San Antonio, Texas.—The City Commission has authorized the issuance of \$500,000 in promissory notes to the J. E. Jarratt Company, San Antonio, with which to purchase a 2500-acre tract of land for a new primary flying school for the Army, to be established here by the United States War Department. The notes will bear interest at 5 per cent and will mature serially from January 1, 1929 to 1933, inclusive.

### German Nitrogen Production.

For the first time since the formation of the German Nitrogen Syndicate in 1919, says William T. Daugherty, United States Trade Commissioner at Berlin, detailed production statistics of the German industry have been made public, and he publishes the following table:

GERMAN PRODUCTION OF FIXED NITROGEN IN 1926-27.

	Metric tons nitrogen content
Synthetic ammonium sulphate.....	355,000
By-product ammonium sulphate.....	60,000
Calcium cyanamide .....	70,000
Calcium nitrate .....	60,000
Sodium nitrate (synthetic Chilean saltpeter)...	15,000
Miscellaneous synthetic nitrates.....	20,000
Total .....	580,000

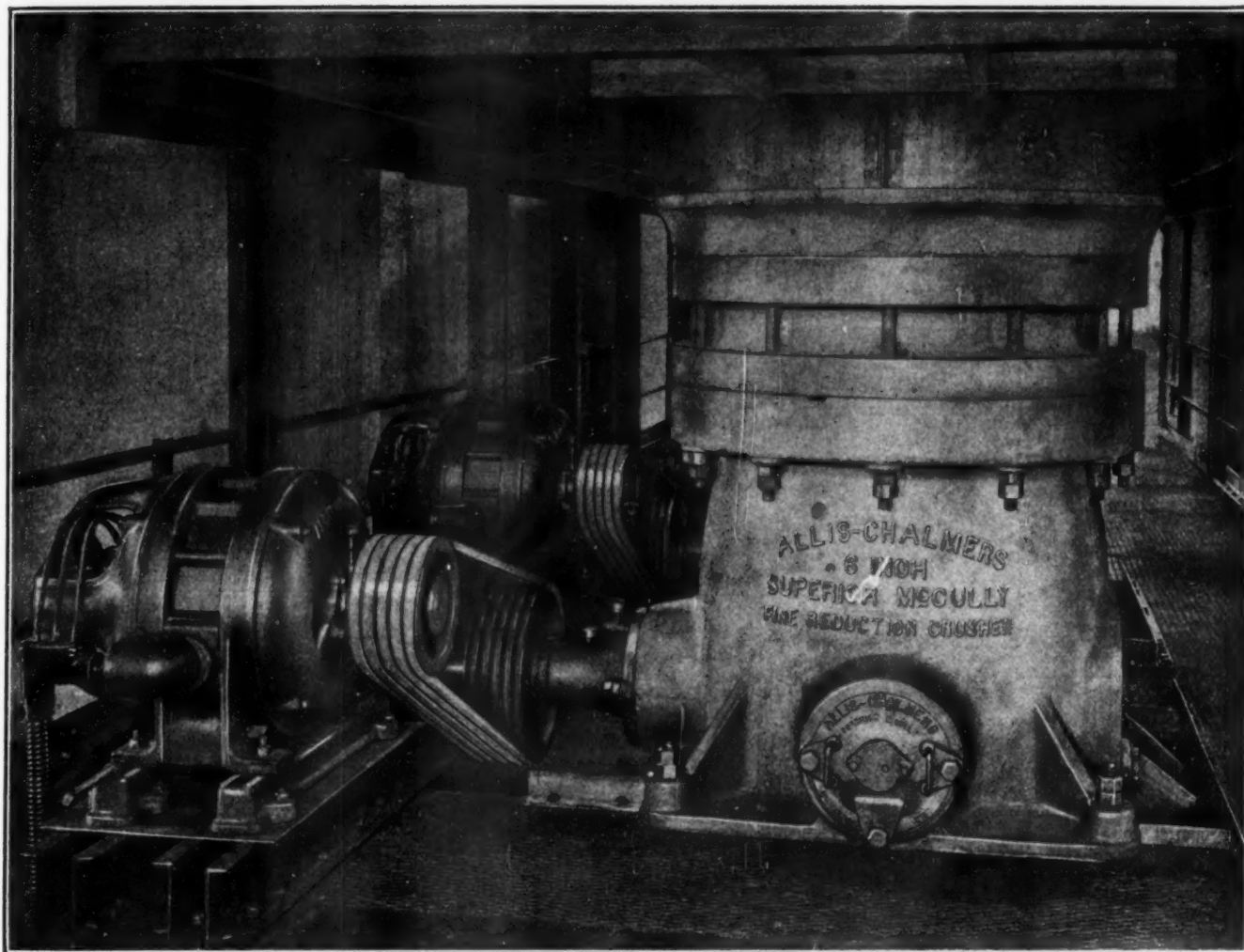
Production of 355,000 tons of fixed nitrogen contained in ammonium sulphate is equivalent to approximately 1,775,000 tons of the fertilizer salt, says Mr. Daugherty, and adds that in the period from July, 1926, to June, 1927, inclusive, the German exports of ammonium sulphate amounted to 451,000 tons, while imports totaled less than 1000 tons. The exports, it appears, went to Japan, France, Belgium, the Netherlands and Spain—France and Belgium on reparations account. He figures that Germany consumed, roughly, 325,000 tons of fixed nitrogen in ammonium sulphate.

The synthetic ammonium sulphate, says Mr. Daugherty, is produced in two plants of I. G. Farbenindustrie A. G. and at Oppau bei Ludwigshafen, the coke plants producing by-products sulphate being chiefly in the Ruhr district. The 70,000 tons of fixed nitrogen in calcium cyanamide production was from the Mitteldeutsche Stickstoffwerke A. G. "Calcium nitrate production has been increased by the German Dye Trust during the past two years and is featured as a strong competitor of Chilean nitrate," Mr. Daugherty adds.

Germany exported in the 12 months ended in June, 1927, almost 200,000 bulk tons of calcium nitrate, artificial urea and miscellaneous artificial fertilizers, while importing 635 tons, and it is estimated that 80 per cent, or 160,000 tons, of the exports consisted of calcium nitrate alone, and that approximately 240,000 tons of this product were consumed by German agriculturalists.

The city of Bristow, Okla., Malcolm Morrison, mayor, has sold \$160,800 improvement bonds, 4½ per cent, to the American National Bank, Bristow, at par and accrued interest.





Allis-Chalmers 6" Superior McCully Fine Reduction Gyratory Crushers driven by Allis-Chalmers 50 H.P. Type ARY Slip Ring Timken Roller Bearing Motors through Texrope Drives.

## Capacity Strength Dependability

*The Texrope Drive enables the motor to be placed close to the crusher and its flexibility protects the motor from shocks. The Allis-Chalmers roller bearing motors are dust proof and require only infrequent greasing. This combination insures continuity of service at lower maintenance cost.*

Modern business conditions demand high capacity, strength and continuity of operation together with simplicity. The Superior McCully Fine Reduction Gyratory Crusher has proved itself the world over for these requirements. It is readily accessible, has a short rigid hollow bored forged steel main shaft, large cast steel eccentric, cut steel gears, positive geared force feed oiling system and reversible top shell with vertical concaves. These features together with the inherent advantages of the Superior McCully Gyratory Crusher design result in the lowest operating costs.

# ALLIS-CHALMERS

MILWAUKEE, WIS. U. S. A.

# FINANCIAL NEWS

## Bond Issues Proposed

Ala., Gadsden—Improvement—City, H. C. Thomas, Clk., receives bids Jan. 16 for \$34,000 6% bonds; O. J. Stocks, Mayor.

Ala., Mobile—Refunding—Mobile County Board of Revenue and Road Commrs., George E. Stone, Treas., receives bids Jan. 9 for \$143,000 4 or 4½% bonds; Arthur D. Davis, Chmn.

Ala., Phenix City—Water Works—City, Roy Smith, Atty., considering selling \$125,000 bonds.

Ark., Morrilton—Courthouse—Conway County, J. H. Reynolds, County Judge, receives bids soon for \$140,000 bonds.

Fla., Bartow—School—Polk County Board of Public Instruction, Don Register, Chmn., receives bids Jan. 20 for \$25,000 6% \$1000 denom. Special Tax School No. 16 bonds.

Fla., Daytona Beach—Improvement—City, Walter A. Richards, Mgr., receives bids Jan. 30 for \$163,000 6% \$1000 denom. bonds; C. N. Teaff, City Engr.

Fla., Fort Lauderdale—Improvement—City, Glenn E. Turner, Auditor-Clk., rejected bids for \$125,000 6% \$1000 denom. bonds. 12-15

Fla., Pensacola—Municipal Improvement—City, J. E. Frenkel, Clk.-Treas., receives bids about Feb. 15 for \$225,000 bonds. 12-22

Fla., Sanford—Drainage—Board of Commrs., Everglades Drainage Dist., approved \$80,000 bond issue, by Slavia Drainage Dist., Seminole County; Fred Elliot, Ch. Drainage Engr.

Fla., St. Petersburg—City, R. E. Ludwig, Director of Public Utilities, votes Feb. 14 on \$790,000 bonds; \$750,000, water plants, extension of mains and purchase of real estate for water system; \$40,000 for additional real estate adjacent to water plant for extension.

Ga., Hortense—School—Board of Trustees, Hortense Consolidated School Dist., Brantley County, J. Alva Murray, Atty., Nahunta, receives bids Jan. 12 for \$20,000 6% \$500 denom. bonds.

Ga., St. Marys—School—Waverly School Dist. voted \$15,000 bonds. Address Board of Trustees.

Ga., Valdosta—School—Board of Education considering bond election in Jan.

La., Bastrop—Road—Morehouse Parish Police Jury, J. W. Brodnax, Pres., receives bids Jan. 10 for \$305,000 5% \$1000 denom. Road Dist. No. 1 bonds.

La., Bastrop—School—Morehouse Parish votes Jan. 24 on \$125,000 School Districts No. 2 and 3 bonds. Address Parish School Board.

La., Mansfield—School—DeSoto Parish School Board, S. M. Shaw, Sec., receives bids Jan. 11 for \$59,500 bonds.

La., Many—School—Sabine Parish School Board, S. H. Porter, Pres., receives bids Jan. 11 for \$100,000 bonds.

Md., Baltimore—Airport—City, Municipal Commrs. of Finance, receives bids Jan. 10 on \$1,500,000 4% coupon bonds; Wm. F. Broening, Mayor. 4-14

Miss., Belzoni—School—Humphreys County plans voting on \$50,000 notes. Address County Commrs.

Miss., Carthage—Courthouse—Leake County, reported, defeated \$80,000 bond issue.

Miss., West Point—School—Town votes Jan. 17 on \$150,000 bonds. Address Mayor and Board of Selectmen.

Mo., Columbia—City Hall—City votes Feb. 7 on \$200,000 bonds; M. J. Hetlu, Mayor.

Mo., Independence—Jackson County may vote Mar. 27 on \$150,000 bonds. Address County Commrs.

Mo., Springfield—School—Board of Education plans calling election on or before April 3 on \$800,000 to \$1,250,000 bonds. Lately noted election before Jan. 31. 12-1

N. C., Concord—School—Cabarrus County Commrs., L. V. Elliott, Clk., receives bids Jan. 6 for \$170,000 4½% \$1000 denom. bonds.

N. C., Franklin—City, F. L. Bryson, Clk., defeated \$80,000 bond issue: \$68,000, water works; \$12,000, sewer. 12-8

N. C., Roxboro—Courthouse—Person County plans bond election. Address County Commrs.

Okla., Alva—Road—Woods County, reported, defeated \$850,000 bonds. Address County Commrs.

Okla., Clinton—Water Works—City voted \$600,000 bonds. Address City Clk.

Okla., Fort Cobb—Water Works, Sewer—

City voted \$55,000 bonds; C. A. Wood, Consit. Engr., Oklahoma City, and Stillwater. 12-22

Okla., McAlester—School—M. J. Hale, Supt. of Schools, receives bids Jan. 6 for \$90,000 bonds.

Okla., Muskogee—City Hall—City may vote Jan. 17 or Jan. 24 on bonds. Address City Clerk.

Okla., Pawnee—School—City voted \$27,000. Address City Clk.

Okla., Ponca City—Underpass—City, C. E. Norton, Clk., receives bids Jan. 10 for \$55,000 \$500 denom. bonds, recently voted. 12-1

Okla., Turpin—School—Turpin Consolidated School Dist. voted \$30,000 bonds. Address Board of Trustees.

S. C., Camden—Paving—City plans voting on \$48,000 bonds. Address City Clk.

S. C., Greenville—Sewer—Greater Greenville Sewer Dist. Comm., T. C. Gower, Chmn., receives bids Jan. 10 for \$175,000 to \$200,000, \$1000 denom. not to exceed 5% bonds.

S. C., Greenwood—Highway—Greenwood County Commrs., John B. Sloan, Chmn., receive bids Jan. 10 for \$250,000 \$1000 denom. not to exceed 5½% bonds.

S. C., Lexington—Paving—City votes Jan. 20 on \$25,000 bonds. Address City Clk.

S. C., McCormick—Highway—McCormick County Commrs., W. O. Graves, Jr., Supvr., receive bids Jan. 6 for \$120,000 5% \$1000 denom. bonds.

Tenn., Altamont—Grundy County voted \$200,000 bonds. Address County Commrs.

Tenn., Chattanooga—Sewer—City, R. H. Crox, Commr. of Streets and Sewers, plans receiving bids early in March for \$320,000 bonds. 9-15

Tenn., Ripley—Road—Lauderdale County, George W. Young, Judge, voted \$1,000,000 bonds. Address County Commrs. 11-17

Tenn., Sevierville—Road—Sevier County voted \$275,000 bonds. Address County Commrs.

Tex., Alvin—School—Alvin Independent School Dist. voted bonds. Address Board of Trustees.

Tex., Barstow—School—Ward County, Pyote Common School Dist. votes soon on \$100,000 bonds. Address Board of Trustees.

Tex., Benjamin—Road—Knox County Road Dist. No. 5 voted \$280,000 bonds; Oliver W. Lee, County Judge; Thos. F. Glover, County Clk. 12-8

Tex., Brownsville—Road—Cameron County, Oscar C. Dancy, Judge, plans selling \$1,000,000 bonds in May.

Tex., Brownsville—Airport—City Comm. may issue \$100,000 bonds.

Tex., Center—Road—Shelby County, F. C. Powell, Judge, votes Jan. 17 on \$200,000 bonds.

Tex., Childress—Road—Childress County voted \$650,000 bonds; W. B. Howard, County Judge. 12-15

Tex., Edinburg—Road—Hidalgo County, Mission Road Dist. No. 5, votes Jan. 16 on \$1,000,000 bonds. Address County Commrs.

Tex., Edinburg—Water Control—Hidalgo County, Water Control Improvement Dist. No. 6, plans \$130,000 bond issue. Address County Commrs.

Tex., Edinburg—Road—Hidalgo County, W. D. Chadwick, County Commr., considering \$5,000,000 bond issue.

Tex., Gainesville—Jail—Cooke County Commrs. plan issuing \$20,000 warrants.

Tex., Greenville—Municipal Improvement—City, Paul G. Thompson, Mayor, defeated \$200,000 bonds. 12-1

Tex., Raymondville—Road—Willacy County, W. H. Mead, Judge, votes Jan. 17 on \$650,000 bonds.

Tex., Shiner—School—City voted bonds. Address City Clk.

Tex., Snyder—Hospital—Scurry County votes Jan. 17 on \$80,000 bonds. Address County Commrs.

Tex., Sonora—Sewer—City, W. C. Gilmore, Mayor, receives bids Jan. 6 for \$45,000 6% \$1000 denom. bonds.

Tex., Yoakum—Sewer—Paving—City voted \$250,000 bonds. Address City Clk.

W. Va., Benwood Branch, Wheeling—Water Plant—City, City Clk. Edwards, considering \$200,000 bond election; C. C. Smith Sons, City Engrs.

W. Va., Parkersburg—Road—Wood County, Walker Dist., voted \$79,500 bonds.

## Bond Issues Sold

Ark., Helena—Drainage—Board of Commrs. Helena Improvement Dist. sold \$145,000 5½% \$1000 bonds to American Southern Trust Co., Little Rock, at 106.45. 12-15

Ark., Smackover—Paving—City sold \$55,000 bonds to M. W. Elkins & Co., Little Rock.

Fla., Pensacola—School—Escambia County Commrs. sold \$48,000 6% bonds to Citizens and Peoples Natl. Bank of Pensacola, at par.

Fla., Sanford—Refunding—City Comm. sold \$510,000 bonds to Wright, Warlow & Co., Orlando, and Prudden & Co., Toledo, Ohio, at 95; \$300,000, 6%; \$210,000, 5½%.

Fla., Winter Park—Municipal Improvement—City Comm. sold \$136,000 5½% bonds to Bank of Winter Park at 100.30; C. Fred Ward, Mayor.

Miss., Blue Mountain—Street—Town, A. N. Donnell, Clk., sold \$9000 bonds to Mrs. J. W. Godwin.

Miss., Gulfport—Fire Station, etc.—City Commrs. sold \$18,000 5% bonds to Meridian Finance Corp., Meridian, at premium of \$110. 12-1

N. C., Marion—Funding—McDowell County Commrs., R. F. Barnes, Clk., sold \$55,000, 4½% bonds to N. S. Hill & Co., Cincinnati, Ohio, at premium of \$888. 12-15

N. C., Marshall—Refunding—Madison County Commrs., J. Will Roberts, Clk., sold \$91,000, 5% coupon or registered bonds to Spitzer, Rorick & Co., Toledo, Ohio; \$58,000, school funding, premium of \$957; \$33,000 refunding, premium of \$1,310. 12-15

N. C., Nashville—Road—Nash County Commrs. sold \$60,000, 4½% bonds to Bank of Detroit, Detroit, Mich., at premium of \$691.

N. C., Rutherfordton—Road, Bridge School—Rutherford County Commrs., W. O. Geer, Clk., sold \$841,000 4½% bonds to Braun, Bosworth & Co., Toledo, Ohio; Detroit Co., Detroit, Mich., and Kauffman, Smith & Co., St. Louis, at \$841,146.

N. C., Star—Water Works—City sold \$12,000, 6% coupon bonds to Magnus & Co., Cincinnati, Ohio, at premium of \$30.

Tenn., Jamestown—Road—Fentress County, H. N. Wright, County Judge, sold \$100,000 5% bonds to I. B. Tigrett & Co., Memphis, at par, accrued interest and premium of \$4250. 12-22

Tenn., Mountain City—Road—Johnson County Commrs. sold \$285,000 bonds to Caldwell & Co., Nashville, at premium of \$2,700.

Tex., Brownsville—Road—Cameron County, Oscar C. Dancy, Judge, sold \$1,000,000 bonds to Brown-Crumer Co., Dallas, and Wichita, Kansas, Caldwell & Co., Nashville, Tenn., American First National Trust Co., Oklahoma City, Rhyon, Smith & Co., Cleveland, Ohio, at par, accrued interest and premium of \$2,027.

## New Financial Corporations

Ark., Paragould—New First National Bank of Paragould, capital \$50,000, chartered; J. M. Lowe, Pres.; R. C. Mitchell, Cashier.

Fla., Miami—City National Bank of Miami, capital \$1,000,000, chartered; J. C. Penney, 330 W. 34th St., New York, Walter R. Comfort, Charles L. Briggs, Lenox, Mass.; in process of consolidation with old City National Bank and Trust Co., Miami.

Fla., Miami—Coral Investment Co., Inc., capital \$20,000, chartered; F. W. Hughson, 116 N. W. Second Ave.; G. M. Okell, 34 W. Flagler St.; A. R. Rhoden.

Fla., Winter Haven—Winter Haven Savings & Mortgage Co., capital \$500,000, chartered; W. H. Anderson, W. F. Boyd, W. B. Craig.

Ky., Paducah—Fidelity Finance & Loan Co., capital \$25,000, incorporated; A. E. Byrne, L. D. Sanders, C. E. Jennings, both City Natl. Bank Bldg.

Ky., Russellville—National Finance Corp., capital \$15,000, incorporated; C. H. Ryan, E. M. Nourse, H. L. Trimble.

La., De Ridder—City Savings Bank & Trust Co., capital \$50,000, organized; P. W. West, Pres.; J. B. Jones, V.-P.

La., New Orleans—Louisiana Discount and Securities Co., Inc., capital \$40,000, incorporated; Roger Simons, Pres., 4301 Dumaine St.; L. A. Theard, V.-P., 1224 N. Dupre St.; Charles Gussman, Sec., 4121 Orleans St.

Miss., Aberdeen—Prairie Loan and Invest-

(Continued on page 136)



**Q**UALITY is a factor of first importance and the term embraces every detail that contributes to the appearance, advertising value and utility of the finished product.

The highest standard in design, layout and execution feature the work of this Company. In lithography, printing, steel die stamping, embossing and binding, there is but one thought—*how well it can be made.*

### AMERICAN BANK STATIONERY CO.

*Consolidating*

GIDDINGS & ROGERS CO. THE OSCAR T. SMITH CO  
CURTAIN, AIKEN and HARGEST STS.  
BALTIMORE, MD.

### AUSTIN K. HANKS, INC.

CHARLOTTE OFFICE  
228 BUILDERS BUILDING

GREENSBORO, N. C.

*Representing the following Products:*

Etowah Buff Brick	Maltex Insulating	Everlastone Indestructible
Carolina Product	Board	Stucco
Scammell Fibre Back	Henry Hope & Sons	Vitraglass
Metal Lath	Metal Casements—Lead leaders and drains	

### JOHN NUVEEN & CO.

First National Bank Building

CHICAGO

We purchase SCHOOL, COUNTY and MUNICIPAL BONDS. Southern Municipal Bonds a Specialty.

Write us if you have bonds for sale

**Taylor  
Wilson  
& Co. Inc.**  
INVESTMENT SECURITIES

### WE BUY MUNICIPAL BONDS

Public officials are invited to avail themselves of our facilities for preparation of legal details.

Your inquiry receives prompt attention.  
UNION TRUST BLDG. CINCINNATI

### WE BUY MUNICIPAL BONDS

We are interested in the purchase of Southern Municipals including road, school, county, drainage and levee bonds.

**M. W. ELKINS & CO.**

Home Insurance Bldg.

Little Rock, Ark.

# Printing

With the accumulated experience of more than forty years and with a modern daylight plant, equipped to produce such publications as the Manufacturers Record as well as large runs on catalogs, descriptive and illustrated business literature for manufacturers, you can put your printing requirements in our hands with the confidence that they will be handled efficiently and the work will be delivered promptly.

## Fleet-McGinley

Incorporated

### Printers

Candler Building

Baltimore

Maryland

## FINANCIAL NEWS

(Continued from page 134)

ment Co., capital \$60,000, organized; George J. Leftwich, Pres.; C. L. Tubb, Sec., both Aberdeen; Rufus Switzer, Sec., Robson-Pritchard Bldg., Huntington, W. Va. 12-8

Miss., Gulfport—National Bank of Gulfport, capital \$125,000, chartered; L. N. Dantaler, Pres.; J. C. Clower, V.-P.; E. S. Taylor, Cashier; formerly Bank of Gulfport.

Mo., Kansas City—Southwestern Investment Co., capital \$10,000, incorporated; Albert Hoeft, L. R. Taylor, 1143 Grandview Blvd.; J. E. Wilcoxen.

Tex., Fort Worth—Mid-West Mortgage Co., capital \$10,000, incorporated; N. L. B. Davis, Andrew M. Howsley, Walter L. Morris, Ft. Worth Natl. Bank Bldg.

Arkansas National Bank, Robert Neill, Pres.; D. O. Sims, Cashier, and Como Trust Co., E. N. Roth, Pres., Stanley Lee, V.-P. and Cashier, all Hot Springs, Ark., consolidated.

First National Bank, W. H. Bush, Pres., S. B. Brooks, Cashier, and Greenville National Bank, J. B. Clayton, Pres., J. A.

Norton, Cashier, all Greenville, Tex., plans consolidating.

First National Bank, J. N. Edens, Pres., R. L. Hamilton, Cashier, Corsicana, Tex., purchased Central State Bank, C. L. Knox, Pres., Wm. J. Rochelle, Cashier.

Virginian Bank of Commerce, W. S. Dangerfield, Pres., A. L. Bowling, Cashier, and Northfork Finance Co., J. H. Bane, Sec.-Treas., all Princeton, W. Va., will consolidate under name of Virginian Bank and Trust Co., J. H. Bane, Cashier.

Commonwealth Finance Corp., Santa Fe Bldg., Dallas, Tex., plans establishing branch office in San Angelo, Tex.; T. R. Logan and J. A. Miller, directors.

Fifth District Building Assn., Covington, Ky., plans increasing capital, \$600,000 to \$1,000,000.

Northern Capital Corporation, New York City, incorporated with capital structure of 10,000 shares of 7% cumulative preferred stock and 10,000 shares of common stock, both issues of par value of \$100 per share, and 10,000 shares of management stock of no par value; August Heckscher, 50 E. 42d St., Chmn. of Board; M. H. Lewis, Pres., 27 William St.; propose making first mort-

gage loans in Southern States, particularly in Florida and North Carolina.

Guaranty Bond State Bank, Jacksonville, Tex., W. J. Weatherby, Pres., J. P. Douglas, Cashier, plans changing name to Texas State Bank and increasing capital, \$25,000 to \$50,000.

The Bank of Osceola County, at Kissimmee, Fla., called for advance payment on December 20 of the last outstanding certificates of deposit which were issued when the bank was reopened on August 14, 1926. These remaining certificates were not due until February 14, 1928, and they bore 4 per cent interest. Previously, approximately 90 per cent of the certificates had been paid, leaving only a small amount that are now redeemed. Dr. T. M. Rivers is president and B. S. Dunlap cashier.

Directors of Commercial Bank of Maryland, John K. Culver, Pres., J. Frank Mallonee, Cashier, Arlington, Baltimore Md., approved plans to merge bank and branches with Union Trust Co. of Maryland, John M. Dennis, Pres., Thos C. Thatcher, Sec., all Baltimore; increasing Union Trust assets to about \$40,000,000; Union Trust Co. plans organizing board of directors of Arlington bank into advisory board connected with that institution and to operate its 2 offices as branches.

### Offers Electric Light Plant and Franchise.

Kinston, N. C.—City Council of Kinston will receive offers at a meeting February 7 for the purchase of the municipal electric light plant, together with franchises to operate in the city. Sealed bids will be received for plant, franchises, rates for power and lighting to consumers, including street lighting for Kinston. W. A. Mitchell is mayor.

### \$72,000,000 Texas Bond Issues for Year.

Austin, Texas—Figures compiled by S. H. Terrell, State comptroller, indicate that bond issues approved by the State for State and municipal financing amounted to \$72,824,935 for the fiscal year ended August 31. This amount exceeds that of the preceding year by \$1,800,000. Bond issues approved in November aggregate \$13,450,000.

### Sells \$841,000 Bonds at \$847,146.

Frank P. Stratford, county accountant, Rutherfordton, N. C., advises that Rutherford county has sold \$841,000 of bonds to Braun, Bosworth & Co., Toledo, Ohio; the Detroit Company, Detroit, Mich., and Kauffman, Smith & Co., St. Louis, Mo., on a joint bid of \$847,146. Of the total, an issue of \$625,000 is for roads and bridges and \$216,000 for schools, both issues to bear an interest rate of 4½ per cent.

### \$7,000,000 Lumber Order—\$250,000 Mill.

Savannah, Ga.—The Savannah Lumber Company of this city closed a contract with the Briggs Manufacturing Company, Detroit, by which it will furnish the latter between 75,000,000 and 100,000,000 feet of hardwood materials for the construction of automobile bodies. The material will be shipped from Savannah over a period of three years, and in order to fill the contract the Savannah company will build a \$250,000 plant at Port Wentworth, on which work has begun. Shipments are expected to begin about March 15.

### New Process of House Construction.

Johnson City, Tenn.—The construction of houses by a new process which is said to eliminate the use of nails, is the purpose of the Happy Valley Homes, Inc., organized here with a capital stock of \$25,000. M. E. Williamson, Elizabethton, Tenn., architect and builder, is president; J. E. Stack, Elizabethton, vice-president and general manager, and Folsom B. Taylor, secretary-treasurer. The new process, invented by

Frank M. Sawyer of Johnson City, involves a system of interlocking cement blocks and the use of tile roofs. The company will confine its operations to Johnson City, Elizabethton and the valley between and is now building a model house near the American Glanzstoff plant.

### Votes \$600,000 Water-Works Bonds.

Clinton, Okla.—Municipal bonds in the amount of \$600,000 have been voted by the city of Clinton for improving and extending its water-works system. A reservoir will be constructed 16 miles west of the city.

### Oil Company Offers \$42,000,000 Bonds.

Tulsa, Okla.—A 10-year issue of 5½ per cent gold bonds, series A, has been offered by the Sinclair Crude Oil Purchasing Company of this city, through the National City Company, Chase Securities Corporation and Blair & Co., Inc., all of New York, and the First Trust and Savings Bank, Chicago. This company is owned by the Standard Oil Company of Indiana and the Sinclair Consolidated Oil Corporation.

### Service to Poultry and Egg Industry by Economics Bureau.

A program of increased service to the poultry and egg industry, the most widely diffused agricultural activity in the United States, has been initiated by the Bureau of Agricultural Economics, Department of Agriculture. A committee has been formed within the department which is giving consideration to the need for better basic statistics regarding laying stocks on hand, hatchings, young stock on farms, and receipts at country concentration points.

A statistical bulletin on poultry and poultry products will include data on virtually all phases of the industry, such as international trade figures of imports and exports of eggs and egg products by countries, monthly prices of poultry and eggs for a number of markets, receipts of products at various markets, and estimated gross income from eggs produced and poultry raised.

Max L. Barker, clerk of the Rowan County Board of Commissioners, Salisbury, N. C., advises that an issue of \$110,000 revenue anticipation notes has been purchased by the Detroit Trust Company of Detroit, Mich., at par and on the basis of an interest rate of 4.10 per cent.



### **"The Early 1880's in Baltimore"**

Southern men and women who lived in, or visited Baltimore in the period when this Company was established—which was the year of 1884—will be interested, we believe, in our anniversary book "The Early Eighties: Sidelights on the Baltimore of forty years ago." A copy will be sent upon request.

#### **MERCANTILE TRUST & DEPOSIT CO. OF BALTIMORE**

Resources \$21,000,000 A. H. S. POST, Pres. F. G. BOYCE, Jr., Vice-Pres.

#### **INDUSTRIAL FINANCING**

A good report by a New York engineer is a great help in interesting New York Banking Houses in the new capital needs of worthwhile companies.

We also assist in establishing the right Banking House contacts.  
Consolidations, Reorganizations, Technical Service, Management.

**EDWIN G. HATCH**

120 Broadway Consulting Engineer New York

**WE** extend the facilities of our organization to those desiring information or reports on companies with which we are identified.

#### **Electric Bond and Share Company**

(Incorporated in 1905)

Paid-up Capital and Surplus, \$115,000,000

2 Rector Street

New York

Delaware Corporations  
Forms, Law and Pointers

Estimates of Cost Furnished Without Cost

#### **DELAWARE REGISTRATION TRUST CO.**

100 West Tenth Street  
Wilmington, Del.

J. Ernest Smith, President and General Counsel.  
Chas. Warner Smith, Vice-President.  
Harry W. Davis, Secretary and Treasurer.

Municipalities  
Corporations  
Railroads

*Financed*

**MARX & CO.**

BIRMINGHAM  
ALABAMA

#### **FLORIDA MUNICIPAL BONDS**

We specialize in the purchase and sale of all Florida Municipal Bond Issues. Correspondence invited.

#### **MUNICIPAL INVESTMENT CORPORATION**

THE HARVEY BUILDING  
WEST PALM BEACH, FLORIDA

#### **We Buy Bonds**

City, County, School and Road from  
Municipalities and Contractors

WRITE

THE PROVIDENT SAVINGS BANK & TRUST CO.  
CINCINNATI OHIO

#### **HAVE YOU BONDS FOR SALE?**

WE BUY ALL CLASSES OF MUNICIPAL BONDS,  
INCLUDING CITY, COUNTY, SCHOOL,  
PAVING, ROAD AND DRAINAGE

*The Hanchett Bond Co. Inc.*

39 SOUTH LA SALLE ST., CHICAGO

*We Buy and Sell*

**MUNICIPAL BONDS AND NOTES  
CORPORATE PREFERRED  
STOCK and BOND ISSUES**

*See Us on Southern Financing*

**R. S. DICKSON & CO.,** Gastonia, N. C.  
New York Greenville, S. C. Goldsboro, N. C.

#### **YOUNG & SELDEN COMPANY**

MANUFACTURING

**Bank and Commercial Stationers**

BALTIMORE, MD.

**STATE—COUNTY—CITY**

*Financing*

**CURTIS & SANGER**

49 Wall Street - NEW YORK

WILMER BLACK, C. P. A. ROBERT W. BLACK, C. P. A.

#### **BLACK & COMPANY CERTIFIED PUBLIC ACCOUNTANTS**

OFFICES:

Suite 905 GARRETT BUILDING - BALTIMORE, MD.  
Suite 403 FIRST NAT'L BANK BLDG. - HAGERSTOWN, MD.

**WE ARE GLAD TO ANNOUNCE**

THAT WE HAVE DISPOSED OF OUR INTEREST IN THE

**AMERICAN BANK STATIONERY COMPANY**

AND HAVE ORGANIZED

**THE OSCAR T. SMITH & SON CO.**

WE WILL OCCUPY OUR BUILDING AT

407-9-11 E. SARATOGA STREET

BALTIMORE, MD.

WHERE WE HAVE INSTALLED A COMPLETE EQUIPMENT FOR

LITHOGRAPHING-STEEL PLATING

PRINTING AND BINDERY WORK

OUR EFFORTS WILL BE DEVOTED EXCLUSIVELY TO  
MANUFACTURING THE HIGHER GRADES OF

**BANK AND COMMERCIAL STATIONERY**

## *A Movie Film with a Good Finish'*



# GRASSELLI **(R-B)** SILICATE of SODA

*Saves Money, Irritating Delays and Nerve-Racking "Grief" of Many Kinds in the Curing of Concrete—AND ALSO MAKES BETTER ROADS.*

Why is the "R-B" Method of curing concrete roads and streets recommended by engineers and boosted by contractors everywhere?

Not solely to satisfy county commissioners and municipal boards. No—there's "a man higher up"—Mr. General Public. He is the Big Boss—the "court of last appeal."

*Don't fail to see our Exhibit at Booth ES16 The 1928 Road Show, Cleveland, Jan. 9th to 13th.*

The most successful contractors and engineers prefer the "R-B" Cure because in the final analysis it gives the taxpayers and motorists enduring streets and highways at lower cost.

Our new "R-B" booklet tells exactly why. Write for it today.

**THE GRASSELLI CHEMICAL COMPANY**  
Established 1839 CLEVELAND

*New York Office and Export Office: 347 Madison Ave., cor. 45th St.*

*Branches and Warehouses:*

Albany	Brooklyn	Cincinnati	New Haven	Philadelphia	St. Louis
Birmingham	Charlotte	Detroit	New Orleans	Pittsburgh	St. Paul
Boston	Chicago	Milwaukee	Paterson		

# GRASSELLI GRADE

*A Standard Held High for 89 Years*



## 7% and 8% Earnings

Resources \$4,000,000.00

Ask for

### "PLAIN FACTS of B. & L."

These facts are covered by three interesting booklets which tell how one may invest \$5.00 monthly or \$10,000.00 lump sum and receive high security and return. They are yours for the asking.

Address

**SAN ANTONIO BUILDING & LOAN ASS'N**

Box 749—San Antonio, Texas

## Unusual Expressions of Appreciation

This year's BLUE BOOK OF SOUTHERN PROGRESS has met with an unusual degree of appreciation and we have received hundreds of letters commending the Blue Book to the widest possible reading on account of its value to the South and the whole country.

*Order copies Now!*

**Manufacturers Record**      Baltimore, Md.

## MARYLAND TRUST COMPANY

BALTIMORE

Transacts a General Trust and Banking Business  
Correspondence and interviews invited

CAPITAL,      \$1,000,000

## THE BANK OF ALABAMA

ENSLEY, ALABAMA

R. A. TERRELL.....President  
J. W. MINOR.....Vice-President  
FOSTER HAMILTON.....Cashier

We Solicit Your Business

## Does Your Banking Connection

meet all of your  
business requirements?

*Write us*

*We invite your inspection of our modern,  
burglar-proof and fireproof Safety Deposit  
Vaults, which may be rented at small cost.*

### BALTIMORE COMMERCIAL BANK

GWYNN CROWTHER, President

26 South Street, Baltimore, Md.

Capital and Surplus \$1,350,000.00      Member Federal Reserve System

# ASSETS

That are Liquid and Ample

—coupled with the desire and facilities to be of assistance in any banking problem that may confront you as business man or individual.



## FIRST AND MERCHANTS National Bank of Richmond

John M. Miller, Jr., President

Capital and Surplus Six Million Dollars

## HARVEY FISK & SONS

120 Broadway

NEW YORK

MEMBERS

New York Stock Exchange

LONDON OFFICE

BRANCH OFFICE

9-13 King William St., E. C. 4      251 West 57th Street

### Architects for Second Unit of \$10,000,000 School Program.

Architects have been selected by the Municipal Architectural Commission for additions to three schools in Baltimore, to be erected by the Public Improvement Commission. This work will constitute the second unit of Baltimore's school building program to be financed by a \$10,000,000 loan recently voted, the first unit being a \$1,000,000 addition for the Baltimore Polytechnic Institute, for which Charles M. Anderson, Baltimore, is the architect. New additions will include a wing for the Arlington school. Clyde N. and Nelson Friz, architects; school No. 84, Edward H. Glidden, Jr., architect, and Gardenville school, Bayard Turnbull, architect, all of Baltimore.

### Scientific American Analog, 1928.

"The Analog for 1928," published by the Scientific American Publishing Company, 24 West 40th street, New York city, marks the third year of publication of this compendium of scientific accomplishment and practical facts. It includes items of interest gleaned during the year from a wide range of publications covering the engineering, sociological and economic aspects of events as they occur in industry and in science.

### \$300,000 Stadium for University of Georgia.

Athens, Ga.—The construction of a \$300,000 concrete and brick stadium to seat 35,000 people has been announced by Dr. S. V. Sanford, president of the University of Georgia. The stadium will be located on the campus of the University, but it is understood that an architect has not yet been selected.

### \$100,000 Creamery for Lake Charles.

Negotiations have been closed by the Association of Commerce of Lake Charles, La., with the Dixie Creameries, Inc., Shreveport, La., for the location of a \$100,000 creamery in Lake Charles. Contracts for the building and equipment will soon be awarded. The Dixie Creameries, Inc., operate 16 plants in Arkansas and Louisiana.

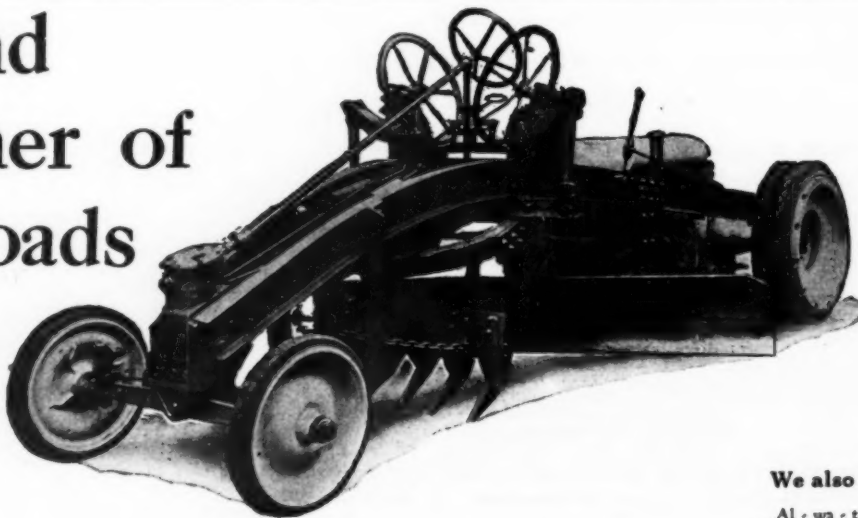
### \$1,500,000 for New Warehouses at Corpus Christi.

Corpus Christi, Texas, December 28—[Special.]—New warehouses adding 160,000 square feet to the warehouse space of 247,520 square feet of the deep-water port here will be constructed from the sale of \$1,500,000 bonds voted by the Corpus Christi navigation district. Additional wharfage will also be constructed. Plans are being prepared for additional railroad trackage in the port area and for additional roads.

### Northern Capital for Southern Investment.

The Northern Capital Corporation has incorporated with a capital of 10,000 shares of 7 per cent cumulative preferred stock and 10,000 shares of common stock, both of \$100 par value per share, and 10,000 shares of management stock of no par value. The corporation will make first mortgage loans in Southern States, particularly Florida and North Carolina, and subsequently use the mortgages to secure collateral trust bonds to be distributed in Northern States. August Heckscher is chairman of the board and M. H. Lewis is president. With C. Lewis, vice-president of Blair & Co., New York, they constitute the executive committee. The principal office of the corporation will be in New York.

## Builder and Maintainer of Good Roads



Maintenance is the big item in roads. The less the original investment in roads the more important is maintenance.

The H. P. "One Man" grader saves in original cost of road and saves in maintenance.

It scarifies, roots, ditches, grades and rolls. It is the best winter snow remover.

On Road Patrol its favored position is because of advantages and economies built into it.

By crawlerizing the tractor we eliminate slippage and lost power.

Get new literature.

#### We also Build:

Al - wa - tracs, Rigid  
Rail and Cahl tracks  
for Crawlerizing your  
tractor.

Automatic wheel  
scrappers.

Drawn and Powered  
Rollers.

Snow Plow to Attach  
to H. P. Graders.

Road Drags.

## W. A. RIDDELL COMPANY

SUCCESSORS TO

HADFIELD-PENFIELD STEEL COMPANY

BUCYRUS

OHIO





# PROPOSALS

BOND ISSUES

BUILDINGS

PAVING

GOOD ROADS



Bids close January 13, 1928.

**TREASURY DEPARTMENT**, office of the Supervising Architect, Washington, D. C., December 23, 1927.—**SEALED BIDS** will be opened in this office at 3 P. M. January 13, 1928, for constructing a roof over the west mailing platform and skylights over the west vestibule at the United States Postoffice and Courthouse, San Antonio, Texas. Drawings and specifications may be obtained from the custodian of the building or at this office, in the discretion of the Supervising Architect. **JAS. A. WETMORE**, Acting Supervising Architect.

Bids close January 10, 1928.

## \$650,000 6% Bonds

### FORT PIERCE INLET DISTRICT

Fort Pierce, Fla.

Sealed bids will be opened at 2 o'clock P. M. on January 10, 1928, for 650 \$1000 coupon bonds of Fort Pierce Inlet District, bearing six per cent semi-annual interest. Bonds mature serially from 1929 to 1958. Approving opinion by Thomson, Wood & Hoffman of New York City.

Write to E. L. Price, Chairman, Fort Pierce, Florida, for circular containing full information.

Bids close January 9, 1928.

## \$143,000 Refunding Bonds

Mobile, Ala.

The Board of Revenue and Road Commissioners of Mobile County, Alabama, respectfully calls for sealed bids for \$143,000 in 4% or 4½% Refunding Bonds, to be issued March 1, 1928, and retired serially. Bids will be opened at 10:30 A. M. January 9, 1928, at the Board's office in the Courthouse, Mobile, Alabama. For further particulars address Geo. E. Stone, Treasurer of Mobile County, Mobile, Alabama.

A. D. DAVIS,  
Chairman, Board of Revenue and Road  
Commissioners of Mobile County, Ala.

Bids close January 17, 1928.

## \$25,000 School Funding Bonds

Carthage, N. C.

Sealed bids will be received by the Board of County Commissioners of Moore County at Carthage, N. C., until 12 o'clock noon January 17, 1928, for the purchase of \$25,000 School Funding Bonds of Moore County, dated January 1, 1928, and payable January 1—\$1000 in the years 1930 to 1932 and \$2000 in the years 1933 to 1945—in gold at Hanover National Bank, New York City. Bidders must name the rate of interest bonds are to bear, not exceeding six per cent, in multiples of one-quarter of one per cent. Bidders must present with their bids a certified check upon an incorporated bank or trust company unconditionally, payable to the order of the county or of an executive, financial or clerical officer thereof, for 2 per cent of the face amount of bonds bid for, the purpose of such deposit being to secure the county against any loss from the failure of the bidder to comply with the terms of his bid. The right is reserved to reject all bids.

W. J. HARRINGTON,  
Clerk Board of County Commissioners,  
Moore County, N. C.

Bids close January 18, 1928.

## Road and Bridge Construction

### STATE OF TENNESSEE DEPARTMENT OF HIGHWAYS AND PUBLIC WORKS

Nashville, Tenn.

Sealed bids will be received by the State of Tennessee, Department of Highways and Public Works, at their offices in the Memorial Building, Nashville, Tenn., until 10 A. M. Wednesday, January 18, 1928, and opened publicly at that hour, for the construction of the following road and bridge projects: Special Bridge Project No. 4, Decatur and Perry Counties—Construction of a concrete

**RATE:** 35 cents per line per insertion  
**PUBLICATION DAY:** Thursday.

**FORMS CLOSE:** 4 P. M. Monday.

**DAY LETTER:** When too late to send copy by mail to reach us by 4 P. M. Monday, forward by day letter.

**THE DAILY BULLETIN OF THE MANUFACTURERS RECORD:**

Published every business day; gives information about the industrial, commercial and financial activities of the South and Southwest.

The Daily Bulletin can be used to advantage when copy cannot reach us in time for publication in the Manufacturers Record before bids are to be opened, or when daily publications are necessary to meet legal requirements.

The same rate applies—35 cents per line per insertion.

bent and steel bridge on 0.764 mile of State Highway No. 23 over the Tennessee River at Perryville.

Project No. 51-A and B, Carroll County—Construction of pavement on 19.536 miles of State Highway No. 1, between the Madison County line and Huntingdon. The grading and draining has been completed under a former contract. Bids will be received separately and as a combination with Project No. 51-C and D.

Project No. 51-C and D, Madison County—Construction of pavement on 14.664 miles of State Highway No. 1, between Jackson and the Carroll County line. The grading and draining has been completed under a former contract. Bids will be received separately and as a combination with Project No. 51-A and B.

Project No. 78-B, Hamilton County—Construction of a pavement on 6.706 miles of State Highway No. 2, between Silverdale and the Bradley County line. The grading and draining has been completed under a former contract. Bids will be received separately and as a combination with Project No. 339-C and D.

Project No. 339-C and D, Hamilton County—Construction of pavement on 6.643 miles of State Highway No. 2, between South Chickamauga Creek and Silverdale. The grading and draining has been completed under a former contract. Bids will be received separately and as a combination with Project No. 78-B.

Project No. 121-D, Humphreys County—The construction of two concrete and steel bridges on 0.068 mile of State Highway No. 1 over Trace Creek near Denver.

Project No. 131-B, Washington and Carter Counties—Grading and draining 3.373 miles of State Highway, between Johnson City and State Highway No. 67, near Watauga. Two bridges over 20-foot span will be included with the roadway contract.

Project No. 375-A, Montgomery County—The construction of a concrete and steel bridge on 0.063 mile of State Highway No. 12 over the Red River near Clarksville.

On all paving projects alternate bids will be received for State-furnished Portland cement.

Bidder's bond, on the form furnished with the proposal, from a surety acceptable to this Department or certified check, made payable to this Department, in the amount of not less than five per cent of the total bid, must accompany bid as evidence of good faith and as guarantee that if awarded contract the bidder will execute contract and give bond as required.

Plans will be furnished at cost, with no refund. Deposit of \$1.00 is required for each copy of specifications, with no refund. Proposals are furnished free of charge. Special attention is called to the special provisions in the proposal which refer to changes in the standard specifications. For further information communicate with the Department offices at Nashville. The right to reject any or all bids is reserved.

**ABOVE CONSTRUCTION IS TO BE DONE UNDER REVISED SPECIFICATIONS ADOPTED OCTOBER 1, 1927.**

C. N. BASS,  
Commissioner.

Bids close February 20, 1928.

## Women's Ward Building

Charleston, W. Va.

Sealed proposals will be received by the State Board of Control at its office in Charleston, West Virginia, until 2 P. M. Monday, February 20, 1928, for doing all work and furnishing all materials necessary to complete a Women's Ward Building, State Hospital for Colored Insane, at Lakin, Mason County, West Virginia, as described below, according to the plans and specifications prepared by Theodore T. Sansbury, Architect, Parkersburg, W. Va.

The building is to be 201 ft. 10 in. x 45 ft. 8 in., with four projecting bays, each 30 ft. 4 in. x 14 ft. 10 in., and an entrance porch 15 ft. 1 in. x 38 ft. 0 in., three stories, with basement. Fireproof construction, except front porch, which is of wood and structural steel.

Plans and specifications and blank form for bids will be mailed by the State Board of Control when request for plans is accompanied with check for \$25. WHICH AMOUNT WILL BE REFUNDED ONLY ON RECEIPT OF BONA-FIDE BID AND CERTIFIED CHECK ON OR BEFORE TIME NAMED ABOVE.

STATE BOARD OF CONTROL,  
J. S. LAKIN, President,  
Charleston, Kanawha County, W. Va.

Bids close February 1, 1928.

## Drainage Pumping Plant

Clarksdale, Miss.

Sealed bids will be received by the Board of Levee Commissioners for the Yazoo-Mississippi Delta at its office in Clarksdale, Mississippi, until 2 P. M. Wednesday, February 1, 1928, for the construction of a drainage pumping plant, at which time and place the said bids will be publicly opened. Bids will be received on both oil-engine-driven and electric motor-driven equipment. Oil engines must be of the full Diesel type and of vertical construction. Electric motors shall be of the synchronous type. The pumping equipment shall consist of one motor-driven or oil-engine-driven pump, with a capacity of 50,000 gallons per minute against a static head of 16 feet (16').

Bids will be considered covering the entire work contemplated under the specifications, but separate bids will be considered on the pumping plant building, foundations and suction pit as a complete unit, and on pumps with either motor or oil-engine drive, together with all suction and discharge piping, vacuum pump, motor generator set, wiring and switchboard and oil storage tanks, all completely installed and ready for operation as a complete unit. No bid will be considered that does not cover either the construction of the entire job complete in every particular, or the furnishing and installation of the equipment complete in every particular, or the construction of the building, pumping pit and foundations complete in every particular.

A certified check equal to ten per cent (10%) of the bid must be furnished in connection with each bid, which check must be drawn on some solvent bank or trust company in the Yazoo-Mississippi Delta Levee District, State of Mississippi.

Plans and specifications are now on file in the office of the Levee Board, Clarksdale, Mississippi, and a copy may be obtained from W. L. Head, Chief Engineer for the Yazoo-Mississippi Delta Levee District, at Clarksdale, Miss., or copy of plans and specifications may be seen in the office of F. G. Proutt, Associate Engineer, 374 Randolph Building, Memphis, Tennessee. A charge of \$10 will be made for each set of plans and specifications furnished to bidders.

The Board of Levee Commissioners reserves the right to reject any or all bids.  
J. W. CUTLER, President,  
G. O. ROBINSON, Secretary,  
Board of Levee Commissioners of the  
Yazoo-Mississippi Delta,  
Clarksdale, Miss.

Bids close February 9, 1928.

**Electric Light and Office Fixtures**

Lafayette, La., December 31, 1927.

The Police Jury for the Parish of Lafayette, Louisiana, will receive and open sealed bids for the electric-light fixtures and office furnishings and fixtures for the new courthouse at 10 o'clock in the morning at a meeting to be held in the Police Jury Room of the old courthouse at Lafayette, Louisiana, on Thursday, February 9, 1928. Plans and specifications therefor may be obtained from William T. Nolan, Architect, Suite 1048 Canal Bank Building, New Orleans, La.

Right reserved to reject any and all bids.

J. J. FOURNET,

President Police Jury.

GEORGE CROUCHET,

Secretary Police Jury.

Bids close January 18, 1928.

**Water-Works Improvements**

Hickory, N. C.

Sealed proposals will be received by the Mayor and Board of Aldermen of the City of Hickory, N. C., until 11 A. M. January 18, 1928, for Water Works Improvements enumerated as follows:

Furnishing and delivering, F. O. B. Cars Hickory, N. C., or designated sidings:  
Two (2) Motor-driven Centrifugal Pumping Units, complete.

One (1) Gasoline-Engine-driven Centrifugal Pumping Unit, complete.

Furnishing labor, material, etc., for and laying approximately two (2) miles of sixteen (16) inch cast-iron water pipe.

Furnishing labor, materials, etc., for and constructing raw-water pumping station and intake.

Proposals must be marked "PROPOSALS FOR WATER-WORKS IMPROVEMENTS FOR THE CITY OF HICKORY, N. C."

Each bid must be accompanied by a certified check in the amount of five (5%) per cent of the amount of the bid, but in no case for less than Two Hundred Fifty (\$250) Dollars, as evidence of good faith. Bid bonds will not be accepted in lieu of certified checks.

Copies of the Specifications, Form of Proposal, Contract, etc., may be obtained upon application to the Engineers.

The right is reserved to reject any or all bids or to award contracts which, in the opinion of the Mayor and Board of Aldermen and the Engineers, appear to be for the best interests of the city.

Bidders must show evidence that they have complied with the "Act to Regulate the Practice of General Contracting as Ratified by the General Assembly of North Carolina, March 10, 1925."

WILLIAM C. OLSEN, INC.,

Engineers, Raleigh, N. C.

J. D. ELLIOTT, Mayor.

H. L. YODER, City Manager.

L. A. WHITENER, Supt. of Public Works.

Bids close January 24, 1928.

**Sewer System**

Irvine, Ky.

Sealed bids will be received by the undersigned until 7 P. M. Tuesday, January 24, 1928, for construction of Sanitary Sewer System, City of Irvine, Ky., approximating 90,000 feet. Tax of \$1.00 per foot against abutting property, ten-year bond plan; remaining cost by city available.

JOHN A. WALLACE, Mayor.

Further particulars write

J. R. WHITE, Clerk.

Bids close January 24, 1928.

**Street Signs**

Birmingham, Ala.

Sealed proposals will be received by the undersigned until 10 o'clock A. M. Tuesday, January 24, 1928, for the furnishing of approximately three hundred and fifty (350) complete street signs f. o. b. Birmingham, Alabama.

Street signs may be of the type generally known as the "Criss Cross" 30-C as manufactured by the Municipal Street Sign Company, Inc., New York City.

The signs are to be used on three (3) inch outside diameter posts. Each sign shall consist of two double-faced plates or four plates having sign on one side, two being encased back to back in malleable iron frame.

Bids will be accepted on other types, provided the bidder shall submit with his bid detailed specifications and plans of the sign and frame which he proposes to furnish, together with one sample sign.

Each plate shall be approximately five and one-half (5½) inches high by twenty (20) inches long. The size of the letter of the name in the top part of the sign shall be ⅝ inches high, and the size of the letter in the lower part of the sign shall be 3 inches high. The lettering on the plates must show the names of the street and avenue as designated by the city.

The bidder shall submit with his bid a certified check or bidder's bond on a reliable surety company in the amount of five (5%) per cent of the bidding price as a surety that in case of award of contract he will enter into a formal contract for the furnishing of street signs, ready for installation, and furnish approved bond in the amount of one hundred (100%) per cent of the contract price as a surety that he will carry out the conditions of his contract and fulfill the guarantees contained therein.

Detailed information will be furnished upon application to the undersigned.

The City of Birmingham reserves the right to reject any or all bids or to accept any bid submitted, even though it may not be the lowest, should it appear to be the most advantageous to the city.

A. J. HAWKINS,

City Engineer.

Bids close January 16, 1928.

**Water Main Construction**

WASHINGTON SUBURBAN SANITARY DISTRICT

Washington, D. C.

Sealed proposals for Contract 68-W will be received at the office of the Washington Suburban Sanitary Commission, Evans Building, New York Avenue N. W., Washington, D. C., until 3 P. M. Monday, January 16, 1928, for laying approximately 20,800 feet of 6-inch to 20-inch cast-iron water mains, materials to be furnished by Commission.

Plans and specifications obtainable after January 3, 1928, from Robert B. Morse, Chief Engineer of District, Hyattsville, Md., on deposit of \$5.00.

T. HOWARD DUCKETT,

EMORY H. BOGLEY,

J. DONALD CLAGETT,

Commissioners.

Bids close January 25, 1928.

**Trees**

Dover, Del.

Sealed proposals will be received by the State Highway Department at its office, Dover, Delaware, until 2.30 o'clock P. M. January 25, 1928, and at place and time publicly opened, for the furnishing of trees for planting along State highways as follows:

**CONTRACT M**

1500 Red and White Oak

200 Dogwood

300 Elm

1000 Oriental Planes

f. o. b. Dover

Complete information and specifications for the above may be obtained upon application to the State Highway Department, Dover, Delaware.

Performance of contract shall commence within ten (10) days after execution of the contract and be completed as specified.

Monthly payments will be made for 90 per cent of the construction completed each month.

Bidders must submit proposals upon forms provided by the Department.

Each proposal must be accompanied by a surety bond, certified check or money to the amount of at least ten (10) per centum of the total amount of the proposal.

The envelope containing the proposal must be marked "Proposal for the construction of State Highway Contract No. M."

The contract will be awarded or rejected within twenty (20) days from the date of opening proposals.

The right is reserved to reject any or all bids.

STATE HIGHWAY DEPARTMENT,

Dover, Delaware.

**CLASSIFIED OPPORTUNITIES****MINERAL AND TIMBER LANDS, WATER POWER, MISCELLANEOUS PROPERTIES**

FOR SALE—Large body of pine timber land on Pacific slope in Mexico; reported will cut 700,000,000 merchantable pine, high in turpentine. Write, with references, to L. WUESTE, P. O. Box 183, Eagle Pass, Texas, for price, full report and terms.

REAL ESTATE INVESTORS—400,000-acre ranch, Texas Panhandle, with over 20,000 cattle, good improvements, lots cultivated; bargain. Also finest Texas winter garden colonizing tracts, also Gulf Coast townsite propositions in the Rio Grande Valley and orchards, oranges and grapefruit, also Dallas income and factory sites. R. J. Thomas, 626 Kirby Bldg., Dallas, Tex.

**RATES AND CONDITIONS**

Rate 30 cents per line per insertion. Minimum space accepted, four lines. In estimating the cost allow seven words of ordinary length to a line. When the advertisement contains a number of long words proper allowance should be made. Terms: Invariably cash with order; check, postoffice or express order or stamps accepted. No display type used. Questionable or undesirable advertisements will not be accepted. The assistance of our readers in excluding undesirable advertisements is requested. We reserve the right to refuse any advertisement. No patent medicine, oil or mining stock advertisement accepted. Rate for special contracts covering space used as desired within one year as follows: 100 lines, 28c per line; 300 lines, 26c per line; 500 lines or more, 25c per line.

**MINERAL AND TIMBER LANDS, WATER POWER, MISCELLANEOUS PROPERTIES****TIMBER AND TIMBER LAND**

TIMBER FOR SALE—Will cut 100,000 cypress ties, 100,000 pine ties, 25,000,000 feet pine and cypress lumber.

J. E. BAXTER, Ocala, Fla.

**COLONIZATION LAND**

COLONIZATION TRACT—50,000 acres surrounding county site of Baldwin County, Ala.; one of the most fertile and best advertised counties in South; \$10 per A. Terms. J. D. Clark, 416-17 Meaher Bldg., Mobile, Ala.

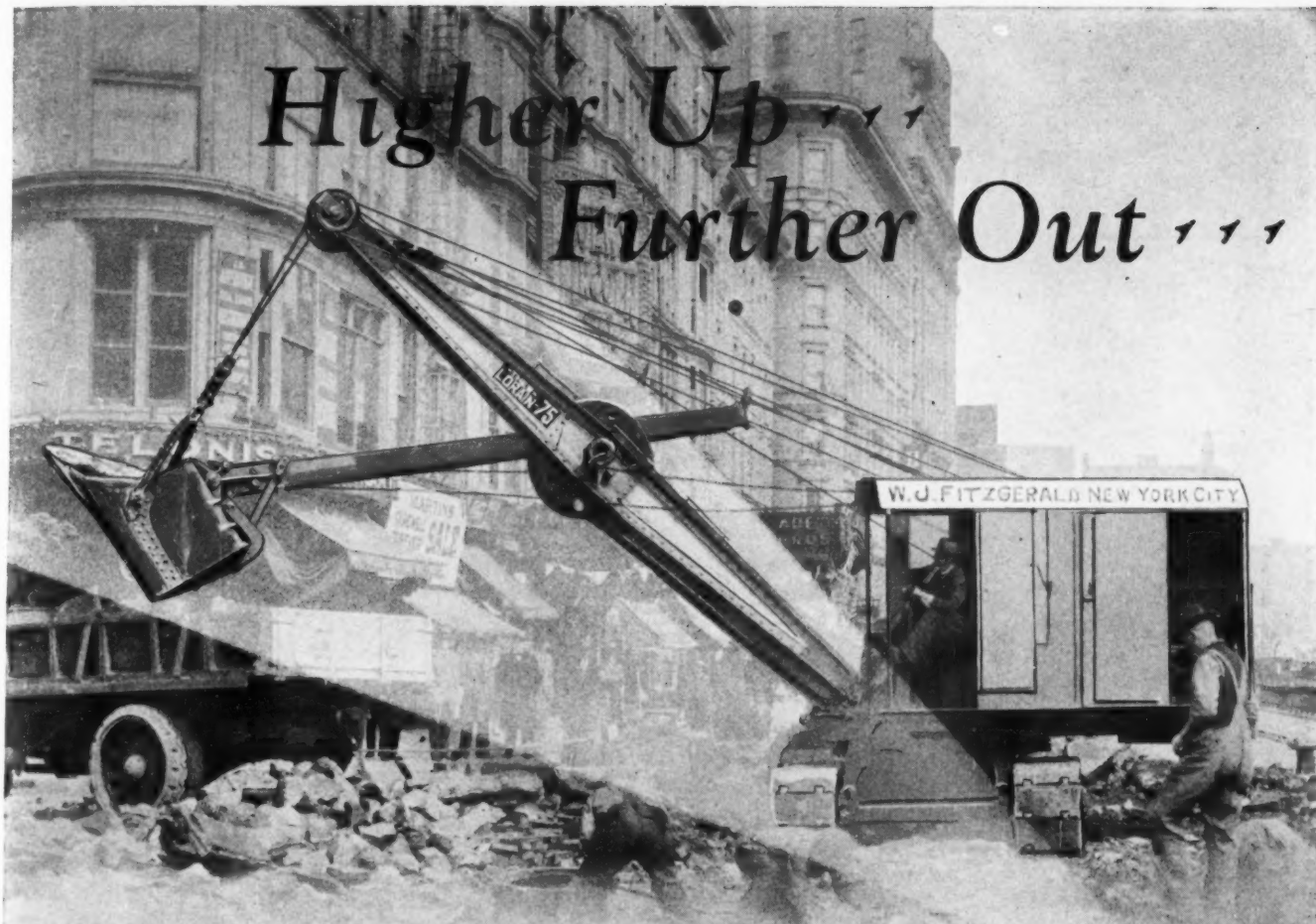
**TIMBER CRUISER**

TIMBERLAND CRUISING and values given anywhere. Also operating plans furnished. Advice as to yearly growth in value of young timber. Many years' practical experience.

W. J. McGOVERN, Timber Cruiser, Clearfield, Pa.



# Higher Up . . . Further Out . . .



*S*OMETIMES it's a hard job deciding what length boom and stick you want with your new shovel. Too short—and you have to pass up certain kinds of work. Too long—and you are handicapped on clearance for other work.

Thew Center Drive applied to boom and stick secures greater reach and increased dumping height. This means that when you get a job that looks hard for your size boom and stick you will find, as hundreds of other Thew owners have discovered, that you can easily go further out for each load and then dump higher than you could with an ordinary boom and stick even several feet longer.

THE THEW SHOVEL COMPANY • Lorain, Ohio  
Gasoline, Steam & Electric • Shovels • Cranes • Draglines



*T*HEW Center-Drive is applied to Truck, Crowd-Hoist-Swing Mechanism and Boom.

# T

# H

# E

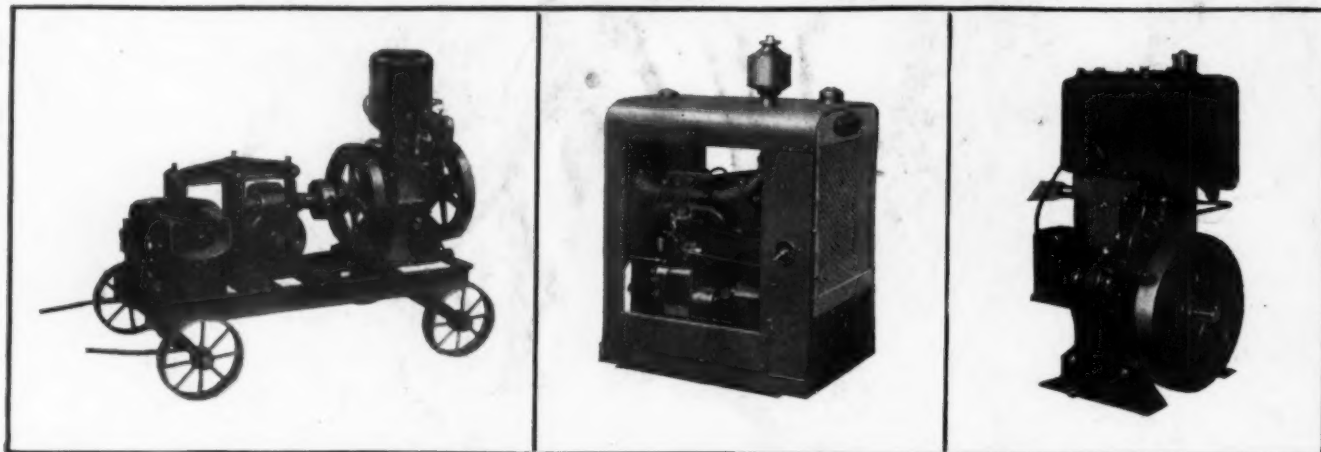
# W

Gasoline  
or  
Electric  
Powered

## LORAIN 60 AND 75

Shovels  
Cranes  
Draglines  
Backdiggers

# NEW



## See These at the Road Show

Novo has three new products to show you at the 1928 Road Show—

1. A phenomenal new 1-cylinder Rollr Engine built on the same principle as the famous "2". 1½ to 4 h.p.—Timken mounted crank and power shaft—lighter and more compact—virtually vibrationless operation.

2. Two new 4-cylinder Rollr Engines in sizes of 14 and 16 h.p. Timken mounted crankshaft and power shaft—vibrationless—economical.

3. A new 3-inch diaphragm pump that weighs only 575 pounds. It has a gear drive which is completely enclosed and running in oil.

You can't afford to miss these. See them at the Road Show.



In addition to these, you can see at the Road Show the Novo "2" Rollr Engine—and this Novo Triplex Road Pump that assures you of 66,000 certain gallons of paving water every day.

NOVO ENGINE COMPANY, 236 Porter Street, Lansing, Michigan  
C. E. BEMENT, Vice-Pres. & Gen. Mgr. Service parts and sales in over 60 cities

# NOVO

Builders of Engines —

THE NEW

Also Pumps and Hoists

# VO

1½ to 50 horse power.



